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MAXWELL ADAMS, Assistant in Chemistry.
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A. B., Leland Stanford Jr. University, 1895; A. M., 1896.

LOUISE MAITLAND, Assistant in Drawing.
8 Salvatierra St.

HENRY DAVIDSON SHELDON, Assistant in Education.
Santa Clara.
A. B., Leland Stanford Jr. University, 1896.

THOMAS ANDREW STOREY, Assistant in the Gymnasium.
Encina Gymnasium.
A. B., Leland Stanford Jr. University, 1896.

MAX GOETHE WRIGHT, Assistant in Romanic Languages.
Palo Alto.
A. B., Leland Stanford Jr. University, 1896.

ALFRED FRANCIS WILLIAM SCHMIDT, Assistant in English.
32 Alvarado Row.
A. B., Leland Stanford Jr. University, 1895.

GENEVRA SISSON, Assistant in Education.
9 Salvatierra St.

JULIUS EMBRET PETERSON, Foreman of the Forge.
College Terrace.

EDWARD SOULE, Foreman of the Woodworking Shop.
Palo Alto.

PERCIVAL J. SCHLOBACH, Curator of the Art Museum.
Museum.

RAY LYMAN WILBUR, Laboratory Assistant in Physiology.
Encina Hall.
A. B., Leland Stanford Jr. University, 1896.

CLARA STOLTENBERG, Laboratory Assistant in Physiology.
Roble Hall.
A. B., Leland Stanford Jr. University, 1896.

THOMAS MARION WILLIAMS, Laboratory Assistant in Physiology. *Encina Hall.*

CARLETON EDGAR DURRELL, Laboratory Assistant in Chemistry.
Palo Alto.

JOHN O. SNYDER, Curator of the Museum of Zoology.
Palo Alto.

CHLOE FRANCIS LESLEY, Artist of the Hopkins Laboratory.
Palo Alto.

FRANK HAINES LAMB, Laboratory Assistant in Botany.
16 Salvatierra St.

LONDA LOLETA STEBBINS, Assistant in the Gymnasium.
14 Alvarado Row.

ADA EDWARDS, Assistant in the Gymnasium.
19 Salvatierra St.

WARREN HULL, Assistant in the Gymnasium.
16 Salvatierra St.

HAROLD PHILLIPS HILL, Assistant in the Gymnasium.
Mayfield.

JOHN MASON ROSS, Library Assistant.
Palo Alto.

DAVID HUTTON WEBSTER, Library Assistant.
Palo Alto.

WILLIAM ANGUS SUTHERLAND, Library Assistant.
Encina Hall.

JOHN EZRA McDOWELL, Assistant to the Registrar.
Mayfield.

FRANKLIN ELISHA BUMP, Stenographer.
Palo Alto.

WALTER CLARK, Stenographer.
14 Alvarado Row.

JOHN HENRY DEMPSEY, Jr., Stenographer.
8 Salvatierra St.

LECTURERS.

JOSEPH HUTCHINSON, Lecturer in Law.
Palo Alto.

A. B., University of California, 1878; LL. B , Hastings Law School, 1882.

HENRY B. PASMORE, Lecturer on Music.
San Francisco.

WILLARD BEAHAN, Lecturer on Railroad Economics.
Palo Alto.

B C. E., Cornell University, 1878. Assistant Engineer, Mississippi River Commission, 1879. Texas and Pacific Railroad, 1880-81; Resident Engineer, Ft. Worth and Denver R. R., 1882; Assistant Engineer Missouri Pacific R. R., 1884-89; Bridge Engineer and Chief of Construction, Government Railways of Chili, 1889-90; Superintendent of Streets, St. Louis, 1890-91; with Anderson & Barr, Contractors, Jersey City, 1892 96.

OTHER OFFICERS.

CHARLES EDWARD HODGES, Resident Architect.
22 Alvarado Row.

ROBERT HENRY MOORE, Chief Engineer. *Palo Alto.*

JOHN J. LEWIN, Electrician. *Palo Alto.*

GEORGE ADDERSON, Overseer of Buildings.
Encina Hall.

CHARES F. MOORE, University Plumber. *Menlo Park.*

CHARLES C. WALLEY, University Carpenter. *Mayfield.*

J. A. MARTIN, Gardener. *Palo Alto.*

STANDING COMMITTEES.

Ways and Means: Professors STILLMAN, HOWARD, BRANNER, SANFORD, and MARX.

The Chairman of the Committee on Ways and Means will be Acting President during the absence of the President.

Students' Affairs: Professors THOBURN, KELLOGG, GRIFFIN, STILLMAN, and A. W. SMITH.

Admission and Advanced Standing: Professors MURRAY, E. BARNES, A. W. SMITH, MATZKE, and the REGISTRAR.

Doubtful Cases: Professors RICHARDSON, GILBERT, MURRAY, GRIFFIN, and the REGISTRAR.

Encina and Roble Halls: Professors MARX, STILLMAN, and WOOD.

Registration of Studies: Professors GILBERT, WOOD, GREEN, MARX, and the REGISTRAR.

Entrance Requirements: Professors ANDERSON, POWERS, ALLARDICE, GOEBEL, and LENOX.

Public Relations, Resolutions, Etc.: Professors BRANNER, PERRINE, ABBOTT, SANFORD, and A. B. CLARK.

Chapel Services: Professors SHOW, THOBURN, MILLER, MURRAY, M. R. SMITH, and G. A. CLARK.

University Publications: Professors HOWARD, FLÜGEL, CAMPBELL, LITTLE, and the REGISTRAR.

Student Publications and Business Enterprises: Professors GREEN, LATHROP, A. B. CLARK, WING, and KELLOGG.

Graduation: Professors POWERS, MATZKE, JENKINS, HOSKINS, and the REGISTRAR.

Contests and Prizes: Professors ROSS, LATHROP, ABBOTT, FAIRCLOUGH, and BROWN.

Use of Halls, Social Affairs, Etc.: Professors WOOD, STILLMAN, GRIGGS, MRS. BAKER, and G. A. CLARK.

Musical Matters: Professors LATHROP, CAMPBELL, GOEBEL, ANGELL, and M. R. SMITH.

University Extension: Professors GRIGGS, E. BARNES, and ROSS.

Summer School: Professors LATHROP, GREEN, FAIRCLOUGH, and G. A. CLARK.

Public Exercises and Holidays: Professors NEWCOMER, NASH, LENOX, FLÜGEL, and the REGISTRAR.

Students' Aid: Professors WING, GREEN, GRIFFIN, and M. R. SMITH.

Athletics: Professors ANGELL, WOOD, MURRAY, RICHARDSON, and BRANNER.

Hopkins Laboratory: Professors JENKINS, GILBERT, and KELLOGG.

Organization and Administration.

Foundation.

The founding at Palo Alto of "a university for both sexes, with the colleges, schools, seminaries of learning, mechanical institutes, museums, galleries of art, and all other things necessary and appropriate to a university of high degree," was determined upon by the Hon. Leland Stanford and Jane Lathrop Stanford, in 1884. In March of the year following the Legislature of California passed an Act providing for the administration of trust funds in connection with institutions of learning. November 14, 1885, the Grant of Endowment was publicly made, in accordance with this Act, and on the same day the Board of Trustees held its first meeting, in San Francisco. The work of construction was at once begun, and the corner-stone laid May 14, 1887, the nineteenth anniversary of the birth of Leland Stanford, Jr. The University was formally opened to students October 1, 1891.

Name and Purpose.

The idea of the University, in the words of its founders, "came directly and largely from our son and only child, Leland; and in the belief that had he been spared to advise as to the disposition of our estate, he would have desired the devotion of a large portion thereof to this purpose, we will that for all time to come the institution hereby founded shall bear his name, and shall be known as The Leland Stanford Junior University."

The object of the University, as stated in its Charter, is "to qualify students for personal success and direct usefulness in life," and its purposes, "to promote the public welfare by exercising an influence in behalf of humanity and civilization, teaching the blessings of liberty regulated by law, and inculcating love and reverence for the great principles of government as derived from the inalienable rights of man to life, liberty, and the pursuit of happiness.

Location.

The University is located on the Palo Alto estate in the Santa Clara Valley, thirty-three miles southeast of San Francisco, on the Coast Division of the Southern Pacific Railway. The estate consists of eight thousand four hundred acres, partly lowland and

partly rising into the foothills of the Sierra Morena. On the grounds are the residence of the founders and an extensive arboretum containing a great variety of shrubs and trees. The Bay of San Francisco lies about three miles east of the University buildings, and across the bay the Monte Diablo Range rises to the height of over four thousand feet. The Lick Observatory, crowning Mount Hamilton, the highest of the range, is plainly visible. To the southwest, between the valley and the ocean, is the heavily wooded Santa Cruz Range, two thousand to four thousand feet in height.

The Santa Clara Valley is one of the most attractive portions of the State in climate, in natural beauty, and in the fertility and adaptiveness of its soil to all the varied fruits of California. The characteristics of the climate are its evenness of temperature, its pure and bracing air, and its freedom alike from the fogs and harsh winds of the coast and from the oppressive summer heat of the interior valleys. In winter the mercury rarely falls below 30°, and the average midday temperature is about 55°; in summer the average midday temperature is between 75° and 80°, while the nights are always cool. The rainfall of about fifteen inches is chiefly confined to the months from December to April, inclusive.

Endowment.

The property conveyed to the University, in addition to the Palo Alto estate, consists of the Vina estate, in Tehama County, of fifty-nine thousand acres, and the Gridley estate, in Butte County, of twenty-two thousand acres. By the will of Mr. Stanford the University received two and a half million dollars, and this bequest became available in 1896.

Buildings.

In arranging buildings and grounds the plan has been to conform them to the peculiar climatic conditions of California, and to provide for indefinite expansion, without crowding or distortion. A series of quadrangles, to be erected as the needs of the University demand, will furnish facilities for all general University work. Surrounding these will be various detached buildings for miscellaneous purposes.

The central group of buildings will constitute two quadrangles, one entirely surrounding the other. Of these, the inner quadrangle, with the exception of the chapel, is now completed. Its twelve one-story buildings are connected by a continuous open arcade, facing a paved court five hundred and eighty-six feet long,

by two hundred and forty-six feet wide, or three and a quarter acres. The buildings are of a buff sandstone, somewhat varied in color. The stonework is of broken ashlar, with rough rock face, and the roofs are covered with red tile. The architectural *motif* is to be found in the old Spanish Missions of California.

The grounds to the east and west of the central quadrangles have been reserved for six smaller quadrangles, three on either side. Behind the central quadrangles will be the workshops and laboratories of the engineering departments, power houses, etc.,— of which the shops, foundry, and power houses are now completed.

The dormitories are east and west of the quadrangle. *Encina Hall*, for young men, is at the east and occupies a ground area of 312 x 150 feet. It is four stories high, built of the same material as the quadrangle, and decorated with end arcades, a central arched porch, and mosaic work. It is provided with electric lights, hot and cold water, steam heat, suitable furniture, bath rooms on each floor, and has accommodations for 300 students. *Roble Hall*, for young women, is at the west. It is of concrete, is about a third the size of Encina Hall, and will accommodate 100 students.

Encina and *Roble Gymnasiums* are substantial frame buildings, equipped with the necessary apparatus and appliances for physical training.

The *Leland Stanford Junior Museum*, a concrete building, 313 x 156 feet, including wings, is situated a quarter of a mile from the quadrangle, and on the west side of the Palo Alto avenue. At the main entrance, four large columns form the principal feature of the facade. The vestibule is 45 x 56 feet, and 70 feet high, and is faced with marble. The Museum contains the archæological and art collections of the University.

The collection made by Leland Stanford, Jr., between 1880 and 1884, and intended as the nucleus of a museum to be established in San Francisco, has been placed here and his own arrangement reproduced. The collection includes especially Egyptian bronzes, Greek statuettes, and Greek and Roman glass of interest and value. One room is devoted to memorials of Senator Stanford. The Cesnola collection contains five thousand pieces of Greek and Roman pottery and glass. The Egyptian collection comprises casts of statuary and bas reliefs, mummies, scrolls, scarabees, etc., collected by Brugsch Bey, Curator of the Gizeh Museum, and Libyan pottery of the date of 3000 B. C., excavated by Dr. F.

Petree. It contains, besides, a collection of embroideries, the gift of Mr. Timothy Hopkins, which is made up of linen dating from the sixth to the twenty-first dynasty, and also Coptic embroidery. The American collection is made up principally of mound relics; there is also a collection of stone implements from Copenhagen, Denmark. The Chinese and Japanese collection comprises bronzes, arms, china, lacquer, specimens of wood carving, cabinets, embroideries, musical instruments, etc. The Corean collection, the gift of Mr. Hopkins, contains costumes, household goods, cabinets, etc. Mr. Hopkins has also placed in the Museum a collection of ancient and modern coins and medals. The fine arts collections have been made mainly by Mrs. Stanford. There is also the Anna Lathrop Hughes collection of paintings, statuary, mosaics, etc., and a collection of pictures in oil and water colors presented by the Hon. Thomas Welton Stanford, of Australia.

The grounds immediately about the University have been reserved, in part for experimental purposes, and in part as residence sites for members of the Faculty and others who may desire to live on the University campus. About thirty cottages have already been erected.

Library.

One building of the quadrangle is at present devoted exclusively to the library. It has a shelving capacity of forty thousand volumes, and the reading-room will accommodate one hundred and twenty-five students.

The library now numbers thirty-five thousand volumes and fifteen thousand pamphlets. The most notable gift to the library has been the valuable collection of railway books presented by Mr. Timothy Hopkins, of San Francisco. This special collection is unusually rich in materials for the study of the early history of railways in Europe and America, and the donor has made generous provision for the maintenance and increase of the collection until it shall be practically complete. A catalogue of the Hopkins Railway Library has been published, thus greatly facilitating its use.

Through the generosity of a number of friends of the University, the valuable library of the late Prof. Hildebrand, of Leipzig, consisting mainly of works on Germanic philology, has lately been acquired.

In addition to the University library, various large collections within reach can be made available to a greater or less extent.

The Free Public, Mechanics Institute, Mercantile, and other libraries in San Francisco, can be used for reference. There are also at the University several large private libraries to which advanced students have access.

Scientific Collections.

It is intended to bring together in the museums of the University a full representation of the natural history and mineral products of California, collections of all books, pamphlets, photographs, and maps bearing upon the early history of the West, and full collections of Indian antiquities and illustrations of aboriginal life. It is desired to receive donations from all persons who are interested in the work and who have material of value to the museums. Collections sent in this way will be carefully labeled and preserved, and the name of the donor will be kept on record. Messrs. Wells, Fargo & Co. generously offer to transport such gifts to the University free of charge, and have instructed their officials "to receive and promptly forward such offerings as may be tendered from time to time."

Trustees.

The general management and control of the institution is vested in a board of twenty-four trustees, of whom fifteen constitute a quorum. The charter provides that the founders, during their lives, shall "perform all the duties and exercise all the powers and privileges enjoined upon and vested in the trustees."

Faculty and Council.

The Faculty consists of the President, professors, associate professors, assistant professors, and instructors, aided by non-resident lecturers, assistants, and other officers. Its routine work is divided among various committees, responsible primarily to the President.

The University Council consists of the President, professors, and associate professors. To the Council are entrusted the determination of requirments for admission, and for the various degrees; the recommendation of candidates for graduation; and the selection of Fellows. It also acts as an advisory body on any questions of general policy that may be submitted to it by the President or Trustees.

Government.

In the government of the University the largest liberty consistent with good work and good order is allowed. Students are expected to show both within and without the University such respect for order, morality, personal honor, and the rights of others as is demanded of good citizens. Failure to do this will be sufficient cause for removal from the University.

Religious Services.

Religious instruction is given in accordance with the provision of the Charter, which prohibits sectarian instruction, but requires the teaching of the "immortality of the soul, the existence of an all wise and benevolent Creator, and that obedience to His laws is the highest duty of man." Voluntary chapel exercises are held daily, and a sermon or address on some religious or ethical subject is given every Sunday morning by some clergymen or layman invited from abroad, or by some member of the Faculty.

The University Chapel Union attempts to organize the religious forces of the University without defining beliefs, "for the promotion of the spiritual life through worship and service." A Students' Christian Association, a Young Men's Christian Association, and a Young Women's Christian Association have also been organized and hold regular meetings. The Associations have compiled a *Hand-Book* containing special information relating to the details of University life at Palo Alto, including library regulations, registration rules, boarding places, etc. This hand-book will be mailed to prospective students on application to the Registrar.

Student Organizations.

In addition to the Christian Associations noted above, numerous general student organizations have been formed for mutual assistance and improvement in various lines. Two college journals, the *Daily Palo Alto* and the weekly *Sequoia*, are published by the students. The *Quad* is an annual, published by the Junior Class, and the bi-weekly *Josh* is edited jointly by students of the University of California and of Stanford.

Departments.

The professorship is the unit of organization, and each professor is independent in his own field. For convenience of classification the work of the University is grouped under the following heads:

Greek; Latin; Classical Philology; Germanic Languages; Romanic Languages; English Language and Literature; Psychology; Ethics; Bionomics; Education; History; Economics and Social Science; Law; Mathematics; Physics; Chemistry; Botany; Etomology; Physiology; Hygiene and Organic Training; Zoology; Geology; Drawing and Painting; Civil Engineering; Mechanical Engineering; Electrical Engineering.

The Hopkins Laboratory of Natural History, located at Pacific Grove, on the Bay of Monterey, is a branch of the biological work of the University.

Admission and Graduation.

CONDITIONS OF ADMISSION.

Candidates for admission must be at least *sixteen* years of age, or if special students, *twenty*. They must present certificates of good moral character, and if from other colleges or universities, must bring letters of honorable dismissal.

I. Admission on Examination.

For meeting the entrance requirements of the University, candidates are offered a choice of twenty-two subjects. These subjects are all reduced to the unit of a high school year, making twenty-eight credits, and placed on an exact equality, except that subject 1 (English) is required of all applicants. *Twelve* credits are necessary for admission to full standing, and these may be made up of English (2 credits) and such other subjects (aggregating 10 credits) as may be selected by the candidate.

1. English (2).
2. Elementary Algebra (2).
3. Plane Geometry.
4. Solid Geometry (½).
5. Trigonometry (½).
6. Advanced Algebra.
7. Physics.
8. Chemistry.
9. Physiology.
10. Botany.
11. Zoology.
12. Drawing.
13. American History.
14. English History.
15. Grecian and Roman History.
16. English Literature.
17. Spanish.
18. French (2).
19. German (2).
20. Elementary Latin (2).
21. Advanced Latin (2).
22. Greek (2).

Solid Geometry and Trigonometry together count one credit; English, Elementary Algebra, French, German, Elementary Latin, Advanced Latin, and Greek, two credits each; all others, one credit each.

The following will indicate the amount of preparation necessary in the various subjects. Full equivalents of the specific work outlined will be accepted in all subjects. The High School year here assumed is based roughly on an average of four recitation exercises of three quarters of an hour each, per week, in each subject.

1. English.—a. *Poetry and the Drama:* Shakspere's Merchant of Venice and Julius Cæsar; Scott's Lady of the Lake; Whittier's Snow-Bound; Longfellow's Evangeline. *Prose:* Irving's Sketch-Book; Thackeray's Newcomes; the Sir Roger de Coverley Papers from the Spectator; Scott's Quentin Durward; Macaulay's Essay on Addison; Macaulay's Life of Johnson.

[Substantial equivalents, such as the books prescribed by the University of California or by Harvard University, will be accepted instead of any or all of the books in this list.]

b. Every applicant will also be required to undergo a test of his ability to write exercises correct in spelling, punctuation, sentence structure, and paragraphing. He may be called upon, for instance, to write a business letter upon some assigned subject, to put into his own language an essay, the material of which is provided him, or to write from dictation; or his examination papers in other subjects may be submitted to the examiner in English; in short, he may be subjected to any fair test of his mastery of the English language for the practical purposes of life. (The equivalent of two years in the High School.)

[Students who are conditioned in English 1*b* will be given an opportunity to make up their deficiency in voluntary classes under private tutors approved by the University. These tutors will charge a fee not exceeding ten dollars a semester.

2. Elementary Algebra.—Fundamental operations, factors, highest common factor, lowest common multiple, fractions, equations of first degree, fractional and negative exponents, surds, equations of the second degree in one or more variables, ratio and proportion, the progressions. Charles Smith's Elementary Algebra, or Wentworth's School Algebra, or Bowser's Academic Algebra, or an equivalent. (The equivalent of one and a half years in the High School.)

3. Plane Geometry.—A complete course in Plane Geometry such as is contained in Chauvenet's, Wentworth's, Bowser's, Wilson's, or Beman and Smith's Geometry, or in a good edition of Euclid. (The equivalent of one year in the High School.)

4. Solid Geometry.—A complete course in Solid Geometry such as is contained in Chauvenet's, Wentworth's, Bowser's, or Wilson's Solid Geometry. (The equivalent of one-half year in the High School.)

5. Trigonometry.—An elementary course in Plane Trigonometry such as is contained in Wells' Plane Trigonometry or in

Lock's Elementary Trigonometry. (The equivalent of one-half year in the High School.)

6. Advanced Algebra. — Combinations and permutations, convergence of series, binomial theorem, logarithms, exponential and logarithmic series, partial fractions, and a short treatment of determinants. Chapters i-xxiv and xxxi of Charles Smith's Treatise on Algebra, or an equivalent. (The equivalent of one year in the High School, in addition to the elementary course in Algebra.)

7. Physics.—The equivalent of a year's work in experimental Physics. This should cover the amount of laboratory practice outlined in such a manual as Allen's Laboratory Physics, Hall & Bergen's Physics, Chute's Physics, or Chute's Physical Laboratory Manual. It is preferred that the study begin by the experimental method and that recitations from a text should follow, rather than precede the working out of the experiments by the pupils.

8. Chemistry.—Beside the usual text-book and recitation work, each student should have a course in the laboratory, where he performs the experiments for himself. The amount of laboratory work desired cannot be obtained with less than four hours per week for one school year spent in actual laboratory work. It is preferred that the laboratory work be entirely upon *general*, rather than partly upon *analytical* chemistry. The course required is comprised in Richardson's Laboratory Manual and Principles of Chemistry, or in Remsen's Introduction to the Study of Chemistry. The inorganic portion of Roscoe's Elementary Chemistry, or of Elliot & Storer's Elementary Chemistry, with a proper course of laboratory experiments such as is given in Smith & Keller's Laboratory Manual, are also recommended as covering the course required.

It is the purpose of the Department of Chemistry to exempt those who receive credit in subject 8 from the elementary course in Chemistry in the University. For this reason any course short of an approximate equivalent of one semester's work in the University will not be acceptable.

9. Physiology.—The elements of human physiology and hygiene, the equivalent of Martin's Human Body. The text-book work should be accompanied by experiment, dissection of animals and organs, and a certain amount of study of the tissues with

the microscope. (The equivalent of one year in the High School.)

In placing Physiology in the list of entrance subjects the fact that Physiology is not generally taught in the High School is recognized. Still it is thought that candidates who come from High Schools where the subject is pursued for at least a year, should have the opportunity of presenting the work for entrance to the University. This explanation may make it clear that candidates who have taken only the work in elementary physiology and hygiene done in the grammar or intermediate grades are not prepared to offer the subject as one of the entrance subjects to the University. The elementary physiology and hygiene of the grammar grades, in this regard, is in the same category as are the other subjects studied in the grammar grades, such as arithmetic and geography, which are assumed as preliminary to the subjects offered for entrance.

10. Botany.—A knowledge of plants and plant-structure and development obtainable from experimental work in connection with Bessey's or Campbell's Botany, or some similar work. (The equivalent of a full year in the High School, of which two-thirds at least should be laboratory work.)

In stating the requirements for students presenting themselves for examination in botany, the main thing had in mind was that the work should be of a practical nature; that is, that the study should be done mainly from specimens and not from books. It must be borne in mind that botany is a department of biology, and means something more than the mere collecting and naming of specimens. A study of the growth and development of the forms studied is of the highest importance, and so far as possible should be made a prominent feature in the work. A good plan for most schools is to select a few typical representatives of the principal groups of plants, e. g., examples of the green, red, and brown algae, moulds, mildews, lichens, liverworts, mosses, ferns, etc., as well as representatives of the great divisions of the flowering plants. Examples of all these are everywhere accessible, and a knowledge of the main characteristics of each of the principal divisions of plants will be expected of the student. The forms selected are to be studied as exhaustively as circumstances will admit, and students should be expected to keep a careful record of their work in the form of notes and drawings made directly from the specimens as they are studied.

If possible the student should be allowed the use of a compound microscope, but when this is not practicable, microscopic

demonstrations by the instructor are indispensable. The laboratory work of the students may be supplemented by such explanatory and text-book work as may be deemed necessary, but this must be understood to supplement and not to replace the laboratory work.

11. Zoology.—A knowledge of the structure and relationships of a number of types of animals, gained by study and dissection of specimens in the laboratory. Marshall & Hurst's Practical Zoology is recommended as a laboratory guide. (The equivalent of a full year in the High School.)

12. Drawing.—The ability to make from nature a correct and expressive outline drawing of a landscape, including buildings; or, the ability to make a workmanlike light and shade drawing from a group of colored still-life objects; or, the ability to make a reasonably accurate and workmanlike life-size outline of a head from nature; or the ability to make a good light and shade study of a cast of the head or full figure. (The equivalent of one full year in the High School, or of five hours of University work.)

No student will be credited in Drawing, (1) who cannot outline clearly and expessively, (2) who cannot shade evenly and truly with some one of these materials: the brush, the pencil, the pen, the charcoal. Candidates are expected to provide themselves with drawing materials for the examination.

13. American History.—A thorough knowledge of Sheldon's Studies in American History (Boston 1891), Thwaites' Colonies (Epochs of American History Series, New York and London, 1891), and Macy's Our Government (revised edition, Boston, 1890). These should be studied in connection topically. MacCoun's Historical Geography of the United States will prove a valuable aid; and for further reading, Fiske's Civil Government, the American Statesmen Series, and the American Commonwealths Series are recommended. (The equivalent of one year in the High School, in addition to the ordinary grammar school course.)

14. History of England.—The equivalent of Gardiner's Student's History of England (New York and London, 1890), and Fonblanque's How We Are Governed. These may be supplemented by readings in Green's History of the English

People and the Epochs of Modern History Series. (The equivalent of one year in the High School.)

15. Grecian and Roman History.—The equivalent of Oman's or Myers' History of Greece, Allen's Short History of the Roman People, Pelhams' Outlines of Roman History, Shuckburgh's History of Rome, and Tighe's Development of the Roman Constitution (History Primers.) For further topical study, read the Epochs of Ancient History Series. Sheldon's Studies in General History contains valuable supplementary materials. (The equivalent of one year in the High School.)

16. English Literature.—Complete familiarity, both as to substance and as to form, is expected, with the contents of the books mentioned below. Preparation should embrace questions of grammer, of metre, and of rhetorical form, and some attention should be given to so much of literary history and biography as naturally connects itself with the works read. Candidates will be tested upon their ability to quote freely and accurately, to paraphrase intelligently, and to outline symmetrically. *Prose:* (*a*) Burke's Speeches on the American War and Letter to the Sheriffs of Bristol, edited by A. J. George; or (*b*) Genung's Rhetorical Analysis, in connection with some such work as A. S. Hill's Principles of Rhetoric. *Poetry:* Hales's Longer English Poems, omitting Shelley's Adonais. *Word derivation:* The etymological notes to the selections from Spenser and Milton in Hales's Longer English Poems. The derivations in question should all be carefully verified in Webster's International Dictionary. (The equivalent of one year in the High School.)

Candidates who have done systematic work in other books than those enumerated may be accepted upon sustaining a satisfactory examination.

17. Spanish.—The preparation in Spanish should follow the same lines as those outlined below for French. The following books are recommended: Manning, Practical Spanish Grammar, Matzke's First Spanish Readings (Heath & Co.), Tamayo y Baus, Un Drama Nuevo (Jenkins, New York), Galdos, Doña Perfecta (Holt & Co.) (The equivalent of one year in the High School.)

18. French.—The requirements for French are as follows: 1. An accurate knowledge of the forms of the language, including the inflections, conjugations, and principal parts of verbs. Particular attention should be devoted to this part of the subject:

constant drill in the verbal inflections, both written and oral, ought to give the desired results. Dictation exercises, where English forms are to be rapidly translated into French, are especially recommended. 2. The elements of French syntax, such as the uses of the article, the personal pronouns, and the subjunctive, the partitive constructions, and the agreement of the participles. 3. The ability to turn easy English into French. 4. The ability to translate ordinary French readily and rapidly. 5. The ability to pronounce French correctly. It is believed that a fairly good pronunciation of French can be obtained in the fitting schools, where students are still young and the organs of speech are more readily trained, if the necessary time is devoted to the subject. French pronunciation should be studied both theoretically and practically, and the differences of vowel qualities, of stress, pitch, and intonation between French and English should be pointed out.

These results ought to be secured from the careful study of an elementary grammar, such as Whitney's Practical French Grammar, Part I, or Grandgent's Short French Grammar; in prose composition, from the study of the exercises belonging to these grammars and the translation of the first thirty-four pages of Grandgent's Selections for French Composition; in reading, from the study of Super's French Reader, Parts II and III, Souvestre Un philosophe sous les toits, Halévy, L'Abbé Constantin, Labiche, Le voyage de Monsieur Perrichon, and De Vigny, La Canne de jonc. For the study of pronunciation, Matzke's Primer of French Pronounciation (Holt & Co.) is recommended. (The equivalent of two years in the High School.)

Every candidate will be expected to present a statement from his former teacher of the amount of work done and the text-books used. The examination will also contain a passage in French to be read aloud by the applicant.

19. German.—A satisfactory preparation will require: the ability to translate easy German prose and verse at sight; an accurate knowledge of the principles of grammar, embracing especially inflections and syntax, the composition of words, the force of prefixes and suffixes, and the relation of the English and the German consonantal changes; also the ability to translate easy prose from English into German. This preparation would be represented approximately, in reading, by Brandt's or Whitney's

Reader, and the careful study of one or more modern dramas; in grammar, by Whitney's, Brandt's, Joynes-Meissner's, or Collar-Eysenbach's Grammar; and in German prose, by the first twenty-six exercises in Harris' German Prose Composition. (The equivalent of two years in the High School.) All applicants must present a statement from their former teacher of the amount of German read and the text-books used.

20. Elementary Latin.—The requirements for Elementary Latin include accuracy in pronunciation, a thorough knowledge of the forms, familiarity with the simpler principles of syntax, a vocabulary of from 1500 to 2000 common words, and the ability to translate easy prose at sight, and to write simple sentences.

These attainments ought to be secured from the careful study of an elementary text-book and about 120 pages of classical prose, together with *daily* exercise in oral or written composition and occasional practice at sight reading. The examinations in Latin Composition for 1897 and 1898 will be based upon the third and fourth books of Cæsar's Gallic War, and the first two orations of Cicero against Cataline.

21. Advanced Latin.—The requirements for Advanced Latin include the ability to translate at sight the simpler portions of Cicero's orations and Vergil's Æneid, familiarity with the principles of Latin hexameter, and the power to translate a passage of connected English based on Cicero.

These attainments ought to be secured from the careful study of four or five orations of Cicero and six books of Vergil's Æneid, if supplemented by daily exercises in composition in connection with the Cicero, and by extensive practice in sight reading.

22. Greek.—Grammer, the inflections, the formation of words, and the essential points of syntax; Xenophon, Anabasis, books I-IV; Homer, Iliad, books I-II; Prose Composition, ability to write easy connected prose (Collar and Daniell's text-book is recommended); translation at sight of easy prose. (The equivalent of two years in the High School.)

A thorough understanding of the ordinary forms of syntax is expected, and the student should be able to translate into *idiomatic* English. A passage of simple prose is selected for sight translation, and a brief English passage for translation into Greek. It is expected of every student that he be able to read Greek aloud without stumbling.

Partial Standing.

Candidates may be admitted to partial standing in the University upon securing at least *ten* entrance credits, if in the judgment of the Faculty they are qualified to go on with regular University work. All deficiencies must be made up before a student can be admitted to full standing.

Time of Examination.

Examinations in all entrance subjects are held at the University in May and in August-September, and will not be held at any other time or place. Specimen examination papers may be obtained on application to the Registrar.

Entrance examinations are held in the following order (for date see calendar page 5):

First Day. — Physiology, 8:30 — 10:30; Elementary Algebra, 10:30 — 12:30; Plane Geometry, 1:30 — 3:30; English, 3:30—6:00.

Second Day. — Advanced Algebra, Spanish, and Physics, 8:30 — 10:30; German and Greek, 10:30 — 12:30; Solid Geometry, English History, and French, 1:30—3:30; Elementary Latin, 3:30 —6:00.

Third Day. — Advanced Latin, Chemistry, and Botany, 8:30 — 10:30; Trigonometry and English Literature, 10:30 — 12:30; American History and Zoology, 1:30 — 3:30; Grecian and Roman History and Drawing, 3:30 — 6:00.

Candidates for admission, may, if they prefer, take a part of their examinations a year before they propose to enter; but no account will be taken of the result of such examinations unless at least four credits are secured. These four credits may all be secured in May, or part in May and part in September, or all in September, at the option of the candidate.

II. Admission on Certificate.

The University does not agree, in advance, to exempt the graduates of any school from all entrance examinations. Recommendations from the principal of any reputable preparatory school will be considered, and examinations waived in all entrance subjects fairly covered in the applicant's course of study, subject to the following conditions:

1. The applicant must have completed a full course in the school and have been duly graduated.

2. The applicant must be specifically recommended by the principal in the subjects in which exemption is granted.

3. The Faculty reserve the right to require an examination in any recommended subject, if for any reason the work done is deemed insufficient or unsatisfactory.

4. For the present, certificates will not be accepted in English Composition, Latin Prose Composition (except by special arrangement), Physiology, Botany, Zoology, and Drawing.

5. In Physics and Chemistry, recommendations must be accompanied by the laboratory note books of the applicant. These note books should contain the actual notes taken in the laboratory, not copies, and must be certified by the teacher.

6. Recommended graduates of the San Jose, Los Angeles, and Chico State Normal Schools, may be admitted, without examination, except in English 1*b*, to provisional undergraduate standing, such standing subject to revision after one year's attendance.

Exemptions from entrance examinations are granted on satisfactory recommendations as a matter of mutual convenience, and to save applicants from unnecessary worry; at the same time it is not considered that the requirement of an examination is necessarily a hardship, and the University will not hesitate to prefer examinations in all cases where there is doubt either as to the quantity or quality of the work offered.

Recommendations will be considered at any time of the year, but since, in general, no one can be assured of admission to the University without examination in one or more subjects, it is important that certificates be forwarded as early as possible.

Blanks for admission on certificate may be obtained from the Registrar.

III. Admission as Special Students.

Persons at least twenty years of age, who are not candidates for a degree, and who wish to pursue some one study and its related branches, may be admitted as special students, without passing the usual entrance examinations, on the recommendation of the professor under whom the specialty is to be taken. But the Faculty may impose any test, by examination or otherwise, that it may deem advisable. Candidates are advised to correspond directly with the professor in whose department they desire to work. Special students are subject to the same regulations as regular under-graduates, regarding amount of

university work, etc.; and they may become candidates for graduation on fulfilling the university requirements, including those for entrance. Blank applications for admission as special students may be obtained from the Registrar.

A failure on the part of any special student to maintain a good standing in the special studies to which he is admitted will at once sever his connection with the University.

IV. Admission to Advanced Standing.

Students from other institutions of recognized collegiate rank, who present letters of honorable dismissal, may be admitted to such standing and upon such terms as the Faculty may deem equitable. Every such candidate is required to present, along with a catalogue of the institution in which he has studied, a full statement, duly certified, of the studies he has completed, including studies passed or credited at entrance. Blank applications for admission to Advanced Standing may be obtained from the Registrar.

Students from other institutions, whose credentials are satisfactory, are usually admitted, without examination, to a minimum standing of one year less than that to which they are entitled at the institution from which they come. At the same time they are admitted to such classes as their preparation seems to warrant. After one semester's residence, if their work has been thoroughly successful and of sufficiently high grade, the terms of admission may be readjusted, and such additional credit given as may then be deemed just by the Faculty; but no such student can finally be given advanced credit for more than three years' work (ninety hours toward graduation).

V. Admission to Graduate Standing.

Graduates of this University, and of other institutions of recognized collegiate rank, may be admitted to graduate standing in the University upon presentation of diplomas or equivalent credentials. They may become candidates for advanced degrees upon fulfilling the conditions prescribed by the Faculty. In case they become candidates for the baccalaureate degree, the question of hours required for graduation may be waived and the degree conferred on the satisfactory completion of the major subject and at least thirty hours of University work. Graduate students

not candidates for any degree, may be admitted, upon the approval of the major professor, to such work as their previous training seems to warrant.

GRADUATION.

Candidates may present themselves for graduation in January, May, and September.

No degree will be granted to any person who has not spent at least one year in resident study at the University. No honorary degrees are given.

I. First Degree.

The degree of *Bachelor of Arts* (A. B.) is granted to students who have satisfactorily completed the equivalent of four years' work of fifteen hours of lecture or recitation weekly, or a total of one hundred and twenty hours, and who have also satisfied the requirements in major and minor subjects.

Each student selects as his major subject or specialty the work of some one professor. This professor has the authority to require the completion of this *major* subject, and also of such *minor* subjects in other departments as he may consider necessary or desirable collateral work. Such major and minor requirements taken together will not exceed forty hours of University work, or one-third of the student's time for the four years of undergraduate work.

With these exceptions, all the undergraduate work in all departments is elective. The student may freely choose for such elective work any subject taught in the University, which his previous studies have prepared him to undertake.

The professor in charge of the major subject of any student is expected to act as adviser to the student in educational matters, and the recommendation of such professor is necessary to graduation.

II. Advanced Degrees.

Every applicant for an advanced degree must file at the Registrar's office, not later than the beginning of the semester preceding that in which the degree is sought, a formal application including a statement of the proposed course of study. This application must be approved by the major professor, and upon acceptance by the Faculty the applicant is admitted to candidacy

or such advanced degree. It is advisable that such application be made as early as possible in the student's course. Where a thesis is required it shall be upon a subject approved by the major professor, and shall be presented in its final form at least six weeks before the close of the semester in which the degree is sought. Accepted theses shall be bound in a uniform style and deposited in the University Library. No advanced degree will be conferred except upon the recommendation of the appropriate Faculty committee.

The degree of *Master of Arts* (A. M.) is conferred upon graduates of this University, and upon others who have had an equivalent training elsewhere, on the satisfactory completion, in residence, of one year of graduate work, beyond the baccalaureate requirements of the department in which the degree is sought, and on the presentation of an approved thesis, or the passing of a satisfactory examination, or both. The course of study for the Master's degree is intended to correspond in amount and character to the first year's work for the Doctor's degree.

In the departments of applied science the professional degree of *Engineer* is conferred upon graduates of this University, and upon others who have had an equivalent training elsewhere, on the satisfactory completion, in residence, of one year of professional study beyond the baccalaureate requirements of the department in which the degree is sought, and on the presentation of an approved thesis, showing ability to do independent work.

The degree of *Doctor of Philosophy* (Ph. D.) is conferred upon graduates of this University, and upon others who have had an equivalent training elsewhere, on the satisfactory completion of at least three years of graduate work, beyond the baccalaureate requirements of the department in which the degree is sought, under the following conditions:

1. The degree is given only on the ground of advanced scholarship and the ability to do independent work in some special line, and not for merely faithful study for a prescribed time or course, nor for miscellaneous study. Three years represent the minimum time in which the degree can be obtained and often a longer period of study will be necessary.

2. Graduate work done elsewhere may be accepted in place of resident study in this University; but in no case will private study without sufficient guidance, or pursued at a distance from libraries or laboratories or other necessary facilities, be accepted

as an equivalent; and no degree will be granted to any person who has not spent at least the last year of such study in residence at this University.

3. The course of study shall embrace one major subject and one or two minors in related departments. The minor subject or subjects shall represent approximately one-third of the course of study; except that such minor subjects may be waived, on the recommendation of the department in which the major subject is taken and with the approval of the Faculty, whenever the general preparation or special needs of the candidate make such a course seem desirable.

4. The candidate must present a thesis of such a character as shall display power of original and independent investigation and constitute an actual contribution to knowledge. He must guarantee the printing of the thesis, in a form approved by the Faculty, within one year after the degree is conferred, and must deposit one hundred copies in the University Library.

5. The candidate must sustain such final examinations in major and minor subjects as may be prescribed by the departments in which studies are taken, and also shall submit to such tests or examinations as may be required by the special committee of the Faculty. This special committee, jointly with the department in which the major work is taken, shall be responsible for the fitness of the candidate. The committee for this purpose shall be appointed as soon as possible after the candidacy is announced and at least a semester previous to the time of conferring the degree.

UNIVERSITY REGULATIONS.

Registration in the University.

On the appointed Registration Days, in September and January, each student must obtain a certificate of registration *in person*, at the Registrar's office. On registering the student receives a card for selection of studies for the semester. This card must be filled out, with the approval of the major professor, and returned to the Registrar within ten days. After this date no changes can be made during the semester except by petition. Study cards not filed within ten days after the beginning of the semester must be approved by all the instructors under whom work is to be taken. Matriculated students who do not obtain permission in advance to delay registration, may register after the appointed Registration Days only upon payment of an additional fee of two dollars.

Enrollment in Classes.

A student desiring to enter any class must present his certificate of registration to the instructor for enrollment at the beginning of each semester. Whether the student is qualified for enrollment in any particular class is a question to be decided by the instructor in charge. In general, the pre-requisites for taking any given course are noted under 'Courses of Instruction.'

Change of Studies.

A student desiring to drop a subject once taken up, or to take up a new subject after the study card has been filed, must present to the Committee on Registration of Studies a petition for such change, approved by the major professor and by the instructors whose subjects are to be taken or dropped. In general, petitions so approved, if they do not give the student too many hours or too few hours, and if presented within one month after the beginning of the semester, are granted without further action. If presented at a later time they will be granted only for extraordinary reasons.

Change of Major Subject.

Petitions to change the major subject will be granted when approved by the professors in charge of both the old and the new subjects, the student being held to all the requirements of the new major subject. In general, the major subject may be changed at the end of the first year, and in some cases later, without appreciable loss of time to the student.

Amount of Work.

Fifteen hours per week of recitations or lectures, or their equivalent in laboratory work, constitute an average semester's work. Students may register for less than *thirteen* or more than *eighteen* hours only by permission of the Committee on Registration; but a student who has received a mark of failure or condition in the semester immediately preceding may not register for more than *fifteen* hours except by permission of the Committee on Registration. Petitions for irregular hours should be made at the beginning of the semester.

Every hour for which credit is given is understood to represent approximately, for the average student, three hours of actual work per week, through one semester. Thus, in lecture or recitation work, one hour is allotted to the lecture or recitation and two hours for preparation or subsequent reading and study on the part of the student. Where the time is wholly occupied

with drawing, field, or laboratory work, three full hours per week through one semester are expected of the student for each hour that counts toward graduation. Where the drawing, field, or laboratory work is supplemented by systematic outside reading or experiment, under the direction of the instructor, such a reduction may be made in actual drawing, field, or laboratory time as seems just to the department concerned.

Conditions and Failures.

A student conditioned in any subject may arrange with the instructor concerned for such supplementary examinations or study as will make good the deficiency; but such deficiency must be removed within one year after the condition is incurred, otherwise the condition will be considered a failure. A student failing in any subject cannot go on with the subject, nor receive credit for the portion in which the failure is incurred, until the subject has been re-registered and taken over again in class. A condition or failure, or withdrawal from class without permission of the Committee on Registration of Studies, limits the student to *fifteen* hours the semester following.

Entrance Conditions.

Students admitted to partial standing may make up deficiencies by (1) completing before graduation, in addition to the one hundred and twenty hours required for graduation, five hours of university work for each entrance credit lacking (except in the case of English, which must be passed on examination); or (2) by passing entrance examinations in the additional subjects necessary, provided such examinations are passed within one year after admission to the University.

From Special to Regular Standing.

Special students may be entered in regular standing and become candidates for graduation, on passing examinations in the required number of subjects. In place of entrance examinations university work to the amount of five hours for each entrance credit may be offered in subjects which are also entrance subjects; but not more than five hours of university work may be thus transferred for a subject counting one credit on entrance, and not more than ten hours for a subject counting two credits on entrance.

Advanced Standing on Entrance Subjects.

Credit toward graduation may be given for entrance subjects in excess of the number required for admission, on the

recommendation of the departments concerned. But such advanced standing will be given only for entrance subjects which are also university subjects, and only in cases where the subject for which advanced credit is asked has been successfully continued in the University, and where the student's general university record is deemed proof of superior scholarship.

Leave of Absence.

A student desiring to leave the University for a brief time should apply to the Committee on Registration. If leave of absence is desired on account of sickness the petition must be indorsed by the Professor of Hygiene. A leave of absence is merely a justification of the absence and not a relief from the work that has been missed. Petitions for absence over one or more semesters, or to delay registration, should also be presented to this committee.

EXPENSES OF THE STUDENT.

Tuition in all departments of the University is free. In 1897–98 registration fees will be charged as follows, payable on registration: Regular undergraduate students, *ten dollars* per semester; special and partial students, *fifteen dollars* per semester. These fees cover registration, library, and other incidental expenses of the University. In addition, students in laboratory courses pay for the materials which they use. The deposits required in advance are different for the different courses, ranging from two to twenty dollars per semester.

The cost of living in Encina and Roble Halls, including board, furnished rooms, light, heat, and attendance, averages about twenty-two dollars per month. Students furnish their own linen, blankets, towels, and napkins. Rooms may be reserved in advance by depositing two dollars with the Registrar.

In the two villages of Palo Alto and Mayfield, each about a mile from the University, good rooms and board, in private houses can be obtained at from eighteen to twenty-five dollars per month. Houses can also be rented for the use of clubs and societies. Special commutation tickets are issued by the Southern Pacific Company, and students living in towns on the line of the railway, from San Francisco to San Jose, can easily go to and from the University daily. Omnibuses connect with all trains at Palo Alto and Mayfield. A careful list of available boarding

places outside the Halls, compiled by the Christian Associations, may be consulted at the Registrar's office during the opening week in September, and new students will find no difficulty in securing accommodations after their arrival.

The expenses of the student, exclusive of clothing and railway fares, need not exceed $225 to $300 per year.

SELF-SUPPORT OF STUDENTS.

No provision has been made for affording direct pecuniary assistance to students, but a considerable number manage in one way or another to earn the whole or a part of their expenses while attending the University. Such opportunities occur in the line of office and laboratory assistance, personal services of numerous kinds, and the management of various student enterprises. Nothing, however, can be assured in advance, and no one is advised to come to the University without resources for at least one semester.

The *Student's Guild* is a regularly incorporated association for mutual assistance in cases of sickness or other unusual emergency. Its resources are mainly the voluntary contributions of students and faculty, fifty cents per semester being the ordinary subscription.

Courses of Instruction.

[*Courses for 1896-1897, with Announcements for 1897-1898.*]

GREEK.

Professors MURRAY, MILLER, and FAIRCLOUGH.

UNDERGRADUATE COURSES.

The undergraduate courses in Greek are intended to train the student carefully in the language itself, to acquaint him with the authors studied as representing the great departments of literature, and to enable him to approach intelligently the problems of Greek life and Greek thought. The instruction in the lower classes is given chiefly by means of recitations, but as the student advances these are supplemented by lectures.

It will be seen that provision is made for those who have had no Greek before coming to the University.

1. **Elementary.**—Grammar; translation of easy prose; Greek composition. After the essential grammatical forms have been mastered, passages of continuous prose are taken up for translation and, as soon as is practicable, the Cyropædeia. The student is made familiar with the ordinary forms of syntax, and exercises in writing Greek are regularly introduced.

5 hrs., both semesters. (MILLER.)

2. **Herodotus and Homer.**—Selections from Herodotus and the Phaeacian Episode of the Odyssey. Course 2 is open to those who have offered subject 22 on entrance, or who have completed course 1 in the University.

3 hrs., 1st semester. (MURRAY.)

3. **Plato and Lysias.**—A continuation of course 2. The Apology and Crito, and selections from Lysias.

3 hrs., 2d semester. (MURRAY.)

4. Prose Composition and Sight Translation. — Simple Prose is taken up for sight reading, and the exercises are based upon the text read. Course 4 is required of all students in courses 2 and 3 who are making Greek their major study.

2 hrs., both semesters. (MURRAY.)

5. Homer.—A critical study of the Iliad, with discussions and papers on Homeric topics. Open to those who have completed courses 2 and 3, or an equivalent.

3 hrs., 1st semester. (MURRAY.)

6. Oratory.—Jebb's Selections from the Attic Orators, with lectures. A continuation of course 5.

3 hrs., 2d semester. (MURRAY.)

7. Prose Composition and Sight Translation.—Selections for translation will be made from the historical and philosophical writers. A variety of practical exercises in Greek composition will be prepared according to the needs of the class. Open only to those who have completed course 4, or an equivalent, but required of major students before graduation.

2 hrs., both semesters. (FAIRCLOUGH.)

8. Greek Tragedy.—The Oedipus Tyrannus, Oedipus Coloneus, and the Electra of Sophocles, the Seven against Thebes of Aeschylus, and the Tauric Iphigeneia of Euripides were read and interpreted. [Course 8 will not be given in 1897-98.]

3 hrs., both semesters. (MILLER.)

9. Plato.—A study of the Republic, accompanied by lectures.

3 hrs., 1st semester. (FAIRCLOUGH.)

10. Thucydides VII, and Demosthenes, De Corona.—Special attention will be paid to Greek history and rhetorical principles.

3 hrs., 2d semester. (FAIRCLOUGH.)

GRADUATE COURSES.

The graduate courses in Greek are intended especially for those who are working for advanced degrees or who are looking forward to teaching. They differ from the undergraduate courses announced above, in that they claim a larger share of the student's time and lead him to a broader and more comprehensive

knowledge of the language and literature. He is introduced to higher philological work and is trained through critical studies for original research.

The center of the work is the Greek Seminary—made up of the director and such students as satisfy him of their fitness for the work. The Seminary meets weekly for the critical interpretation of some Greek author, the different members, in turn, filling the post of interpreter. Topics for investigation are assigned, and papers prepared by the members are read and discussed.

Members of the Seminary are expected to supplement their critical work by wide reading, and lectures on the author or authors under discussion are given by the director.

In 1893-94 the Seminary was occupied with the study of Euripides, in 1894-95 with that of the Old Comedy, in 1895-96 with that of Thucydides, and in 1896-97 lectures were given on the structure of the Odyssey. Each year some great department is taken up for close study.

11. The Greek Seminary.—In 1897-98 the Seminary will be occupied with the study of the Euripidean drama. The Alcestis and the Tauric Iphigeneia will be studied critically, and collateral work will be assigned. In connection with the work of the Seminary proper the Frogs of Aristophanes will be read and interpreted. [Earle's Alcestis (Macmillan), and the Editions of the Iphigeneia by Bruhn (Weidmann) and Wecklein (Teubner), with complete texts of the tragic poets, should be obtained in advance.]

2 hrs., both semesters. (MURRAY.)

12. Lectures on Ancient Tragedy.—A discussion of the art of Euripides with reference to his times.

1 hr., both semesters. (MURRAY.)

Special Lectures.—During the first semester, 1897-98, Professor Murray will lecture weekly on the Greek Epic. This course is intended for literary students in all departments, and does not presuppose a knowledge of Greek. For those who follow the course with collateral reading, one hour's credit will be allowed.

Classical Lectures.—A series of monthly lectures intended for all students in Latin and Greek will be given by the instructors in these departments. These lectures will treat of subjects in the

line of art, life, language, customs, which cannot well be brought into the routine work of the classroom, but which, nevertheless, are of importance to the classical scholar. They will be considered supplementary to the regular courses.

LATIN.

Professors PEASE, MILLER, and FAIRCLOUGH, and Assistant Professor DODGE.

UNDERGRADUATE COURSES.

The aim of the undergraduate courses in Latin is to give the student a somewhat systematic knowledge of the language and its development, an acquaintance with the main features of the literature, and some idea of the Roman civilization. The instruction is given chiefly by means of recitations and informal lectures. As the student advances in his Latin studies, he is encouraged more and more to make use of the library, and to become familiar with the standard books of reference.

1. Cicero and Vergil.— Cicero, five orations; Vergil, six books of the Æneid; exercises in Latin composition and sight reading. This course is planned for those who have passed in entrance subject 20. It is regarded as preparatory to the work required of major students in Latin.

5 hrs., both semesters. (DODGE.)

2. Cicero, Livy, and Terence.—Cicero, De Senectute; Livy, books XXI-II; Terence, Phormio. Open to students who have passed in course 1, or in subject 21 of the entrance requirements. Two sections. In section I, intended for students whose major study is Latin (or Greek), it is proposed to give the thorough drill necessary as a basis for future classical study in the University. In section II, intended for students whose major study is not the classics, the chief aim will be, after a hurried grammatical review, to gain as great facility as possible in reading Latin. All students taking Latin 2 are expected to register also for course 1 in History unless they have offered subject 15 for entrance.

3 hrs., both semesters. (MILLER, DODGE.)

3. Translation at Sight, and Latin Composition.— This course is open to students who are taking course 2, and is required

of major students in Latin. Training in the rapid reading of Cicero's De Amicitia, Livy, book I, and Nepos will be given one hour a week; and the other hour will be devoted to Latin composition in connection with the Cicero and Livy of Course 2, and to the study of the private life of the Romans in connection with the Terence.

2 hrs., both semesters. (DODGE.)

4. **Suetonius and Vergil.**— Suetonius' Life of Augustus, and the Fourth of Vergil's Georgics. Open to students who have had course 2.

2 hrs., 2d semester. (DODGE.)

5. **Horace and Tacitus.**— Selections from the Satires, Odes, and Epistles of Horace, and from the works of Tacitus. This course, open to those who have passed in course 2, will aim at giving a comprehensive view of these authors and their place in the literature. Attention will be directed especially to the style and subject matter, and to the history of the times.

3 hrs , both semesters. (FAIRCLOUGH, DODGE.)

6. **Translation at Sight and Latin Composition.**— This is open to students who have taken course 3. One hour a week the class will read selections from Cicero, Tacitus, and Pliny's Letters. Special effort will be made to get at the Roman point of view, and and to grasp the meaning in the order of the Latin. The exercises for translation into Latin will be prepared to suit the needs of the class. Conversation and the writing of epistles in Latin will be made a feature of the course.

2 hrs., both semesters. (FAIRCLOUGH.)

7. **Latin Comedy.**— In this course the Triummus of Plautus will be studied with particular reference to the early forms, constructions, and metres; and that followed by the more rapid reading of the Menaechmi, Captivi, and Rudens of Plautus, and the Andria of Terence. Considerable attention will be paid to a comparison between ancient and modern comedy. Lectures will also be given on the development of Latin comedy, on the early theatre, and on the method of presenting a play.

3 hrs., 1st semester. (FAIRCLOUGH.)

8. **The Letters of Cicero and Pliny.**— The aim will be to get a view of Cicero and his times from the original sources, to see some of the causes for the breaking down of the Republic, and to become familiar with official procedure in the judicial and

legislative bodies. Special attention will be paid to the familiar style of Cicero's letters, and a few letters of Pliny will be read in contrast.

2 hrs., 2d semester. (PEASE.)

9. Catullus, Tibullus, and Propertius.—Selections from these authors will be studied, largely with reference to the thought and artistic form, and compared with similar poems of other writers. Other selections will be read in translation in order to gain a comprehensive view of their works as a whole. [Course 9, alternating with course 11, will not be given in 1897 98.]

2 hrs., 1st semester. (PEASE.)

10. Roman Society in the First Century.—Illustrative selections will be read from the Satires of Juvenal and the Epigrams of Martial. Supplementary reading will be assigned in various writers on that period. [Course 10, alternating with course 12, will not be given in 1897 98.]

2 hrs., 2d s me ter. (MILLER.)

11. Lucretius.—Selections from the De Rerum Natura will be read in Latin and the rest in translation, attention being paid to the philosophic thought and its poetic treatment.

2 hrs., 1st semester. (PEASE.)

12. Quintilian.—In connection with the study of the subject matter of books X and XII, considerable attention will be paid to literary criticism and to the history of Roman literature.

2 hrs., 2d semester. (FAIRCLOUGH.)

13. Teacher's Course.—This is a course of lectures and recitations intended for those who expect to engage at once in preparatory teaching. The lectures will treat of the aims and methods of teaching preparatory Latin, the books and other helps serviceable to teachers, and such practical subjects as pronunciation, sequence of tenses, indirect discourse, and the like. There will also be practice in writing Latin and in teaching. Portions of the authors suitable for preparatory work will be read in class, and the members will serve in turn as teachers under the supervision of the instructor. Opportunities will also be given to visit preparatory classes in the vicinity, and reports of the observations will be presented by each member. [Course 12 will be given again in 1897–98.]

2 hrs., 1st semester. (PEASE.)

14. Roman Oratory.—An outline of Roman Oratory based on Cicero's De Oratore, and Tacitus' Dialogus de Oratoribus. Portions will be read in the Latin and the rest in the translation. See course 15.

2 hrs., 1st semester. (PEASE.)

15. Roman Law.—A large part of Gaius' Institutiones will be read in the Latin and the rest in translation. The course will also treat of the sources of Roman law, the process of reducing the law to a code, and of the various collections. Courses 14 and 15 will be open to those who have had course 2, and are intended especially for students in law.

3 hrs., 2d semester. (PEASE.)

16. Topography of Rome.—Lectures on Roman Topography and the extant monuments of antiquity.

2 hrs., 1st semester. (PEASE.)

GRADUATE COURSES.

The graduate courses in Latin are intended primarily for students who are looking forward to teaching as their profession. They aim to give a wider acquaintance with the language and literature than is usually afforded in undergraduate courses, and to offer training in philological criticism and in the methods of scientific research. The work centers in the Seminary, a body composed of the director and such graduate students as shall satisfy the director of their fitness for the work; in this, the students present the results of their study in the way of interpretations, reports, reviews, and original papers. The director selects an author, or group of authors, for the year's work, encourages a wide reading of Latin on the part of the student, usually with some particular end in view, assigns separate portions of the author in hand for minute and critical study as the basis of interpretation, suggests topics for investigation, guides the members in their private work, and presides at the regular meetings. The work of the Seminary is supplemented by lectures on related subjects.

During the year 1896-97, the Seminary, with a membership of eleven, under the direction of Professor Miller, met two hours a week for the study of Latin Lyric Poetry. The meetings were devoted to the interpretation of selected Odes of Horace, and to the consideration of papers on various topics connected with Latin Lyric Poetry, the results of the year's investigation by the

members jointly and individually. In addition to the regular work of the Seminary, Professor Fairclough delivered a course of lectures on Latin Lyric Poetry, while Professor Pease offered a course of lectures on Latin Syntax, and conducted a series of practical exercises in translating English into Latin and Latin into English at dictation.

17. **Latin Seminary**.—In 1897-98 the Seminary will be occupied with the study of Cicero's Letters. The meetings will be devoted to the interpretation of selected Letters of Cicero by the members in turn, and to the presentation of papers containing the results of their special investigations. [Students should provide themselves in advance with the critical edition of Cicero's works by Baiter and Kayser (Tauchnitz, Berlin)].

2 hrs., both semesters. (PEASE.)

18. **Practical Exercises in Oral and Written Translation.**

2 hrs., 1st semester. (PEASE.)

19. **Sermo Familiaris**.—A course of lectures upon the popular as opposed to the learned element in Roman literature.

1 hr., 1st semester. (FAIRCLOUGH.)

20. **Latin Palaeography**.— Lectures, with practice in reading fac-similes of ancient manuscripts.

1 hr., 2d semester. (PEASE.)

21. **Problems in Latin Grammar.**— This course will consist of investigations by the members of the class into some of the questions of Latin Grammar. Conferences will be held once a week.

1 hr., 2d semester. (PEASE.)

22. **A Journal Club** will meet weekly under the direction of Professor Pease, to report on articles of interest in current periodicals and on the new books that appear.

CLASSICAL PHILOLOGY.

Professors MILLER, PEASE, MURRAY, and FAIRCLOUGH, and Assistant Professor DODGE.

The courses offered in this department are essentially the same as those offered by the departments of Greek and Latin. But the ordinary college requirement of four years of Latin and two years of Greek for entrance is presupposed on the part of

candidates for a degree in Classical Philology. The course is arranged with a two-fold purpose in view: first, to give to graduates an adequate equipment for the successful teaching of Greek and Latin in the preparatory schools; and second, to prepare students of the classics for graduate work in the American Schools for Classical Study in Athens and Rome, and in the German universities, where no division of the classical languages is made.

The Archaeological Institute of America offers each year for study in Athens and Rome two fellowships of $600 each, awarded to graduates mainly by competitive examination. The course as planned aims to prepare also for those examinations.

UNDERGRADUATE COURSES.

[**1-10.** See under Greek, 1-10.]

[**11-26.** See under Latin, 1-16.]

27. Greek and Roman Mythology.— A study of the Greek and Roman myths by means of ancient sculptures and vase-paintings. Lectures and recitations.

2 hrs., 1st semester. (MILLER.)

28. Modern Greek.— This course aims at giving an acquaintance with the spoken language of to-day in its relations to the classical language, with practice in reading and speaking Modern Greek.

1 hr., 1st semester. (MILLER.)

29. Topography of Rome. [See under Latin, course 16.]

30. History of Greek Sculpture.— From the earliest times down to the time of Alexander. Lectures and recitations.

2 hrs., 2d semester. (MILLER.)

31. Topography of Athens.—A study of the Monuments and Mythology of Athens on the basis of Pausanias' description of Athens.

2 hrs., 1st semester. (MILLER.)

32. Greek Dialects and Epigraphy.—Lectures on the Greek dialects and practical exercises in reading inscriptions.

2 hrs., 2d semester. (MILLER.)

33. Italian.—[See under Romanic Languages, course 11.]

[Courses 31-33, alternating with 27-30, will not be given in 1897-98.]

GRADUATE COURSES.

For graduate work, see under Latin and Greek.

GERMANIC LANGUAGES.

Professors GOEBEL and GRIFFIN, and Assistant Professors WICKHAM and RENDTORFF.

The aim of the elementary classes in this department is to give the student a thorough knowledge of German grammar and to enable him to acquire facility in reading German. The more advanced classes take up the study of the poets and writers of the classical period, and it is intended to offer, by the reading and interpretation of these authors, an equivalent for the study of the ancient languages to those not taking Latin or Greek in their University course. The general responsibility for the work of the first and second years in this department rests with Professor Griffin; that for the work in Literature and Philology with Professor Goebel.

1. **Elementary.**—German Grammar and German Reader; German Composition; Novelletten; translation of easy prose and poetry. Course 1 is intended for those beginning the study of the language. The number of sections is limited to five; three five-hour sections and two three-hour sections. Students who have had training in Latin, and students who have some knowledge of German, but not sufficient to enable them to pass in entrance subject 19, will be admitted to the three-hour sections.

3 and 5 hrs., both semesters.

(GRIFFIN, WICKHAM, RENDTORFF.)

2. **Second-Year German.**—Minna von Barnhelm, Heine's Prosa, and Hermann und Dorothea. [In 1897-98, Goetz von Berlichingen, Lessing's Prosa, and Wilhelm Tell.] Advanced grammar and composition, translation at sight. Open to students who have completed course 1 or its equivalent, or who have received credit for entrance subject 19.

3 hrs., both semesters. (GRIFFIN, WICKHAM, RENDTORFF.)

3. **Lessing, Schiller, Goethe.**—*a.* Lessing's Nathan der Weise, with lectures on Lessing as a dramatist and as a social and political reformer. [In 1897-98, Schiller's Wallenstein, with lectures on the social and political conditions of that period.] (First semester.) *b.* Schiller's Jungfrau von Orleans studied in connection with the political condition of France at that period. [In 1897-98, Goethe's Iphigenie: interpretation and lectures in

connection with Kuno Fischer's essay on Iphigenie.] *c.* Balladen und Romanzen (Buchheim's edition). (Second semester.)

2 hrs., both semesters. (GRIFFIN, WICKHAM.)

4. Scientific German.—The work in this course consists in the translation of monographs by such leading German scientists as Cohn, Müller, Weissmann, and Helmholtz. No student is advised to take this course who has not had at least two years of thorough preparation in literary German.

2 hrs., 1st semester. (GRIFFIN.)

5. Historical German.—This course consists of the rapid translation of modern historical and economic German. Essays published in current numbers of the Deutsche Rundschau and other leading German periodicals are studied. No student is advised to register for course 5 who has not had at least two years of literary German.

2 hrs., 2d semester. (GRIFFIN.)

6. German Conversation and Rapid Reading.

1 hr., both semesters. (RENDTORFF.)

7. Advanced German Composition.—Buchheim's Prose Composition. Writing of essays in German. Open to students who have completed courses 1 and 2, or their equivalents.

1 hr., both semesters. (RENDTORFF.)

8. Deutsche Aufsätze und Stilübungen.—Open to students who have completed course 7, or its equivalent.

2 hrs., both semesters. (RENDTORFF.)

9. Goethe, Herder.—Goethe's Faust, First and Second Parts. Interpretation with lectures on the development of the Faust-legend, the history of Goethe's Faust and its philosophical and ethical ideas. [In 1897–98 Goethe's Tasso and miscellaneous critical essays by Herder will be studied.]

2 hrs., both semesters. (GOEBEL.)

10. History of German Literature.—Lectures on the history of German Literature from the earliest times to the Reformation, with parallel readings from Max Müller's German Classics. [In 1897–98, lectures on the history of German literature in the 18th century will be given.]

2 hrs., both semesters. (GOEBEL.)

11. Poetics.—Lectures on the psychology and æsthetics of poetry as the basis for literary criticism. Comparative study of the principal theories of lyric, epic, and dramatic poetry from Aristotle to the present time. This course is open to all students of literature.

2 hrs., 1st semester. (GOEBEL.)

12. Thesis or Research Work.— Major students in German who have completed a course of three years in German, will be given an additional hour of credit upon presenting a satisfactory thesis embodying the results of independent work in the history of German literature. Permission to register for thesis work must be obtained from the major professor.

GRADUATE COURSES.

The graduate courses in German, for which a thorough linguistic preparation is required, are intended especially for students who will make the teaching of German their later profession. Careful attention is given to the linguistic as well as to the literary training of the student, aiming at a comprehensive insight into the historical growth of the Germanic languages and literatures. The scientific methods of original and critical research are taught and practiced in the seminary. Such students as have given satisfactory proof of their ability as independent investigators will be admitted to the degree of Ph. D., after having presented a thesis containing a contribution to science, and having fulfilled the other requirements prescribed by the University.

The Hildebrand Library—The purchase by the University of the extensive library of the late Professor Hildebrand of Leipzig offers, on account of the rare completeness of the collection in all branches of Germanic philology and literature, extraordinary opportunities for graduate work in German.

13. Middle-High German.—Middle-High German Grammar, with readings from Weinhold's Lesebuch.

2 hrs., 1st semester. (GOEBEL.)

14. Nibelungenlied.—Interpretation, with lectures on the history of the Nibelungen-saga. [In 1897-98 Walther von der Vogelweide will be interpreted.]

2 hrs., 2d semester. (GOEBEL.)

15. Old-High German.—Old-High German Grammar, with readings from Braune's Lesebuch.

2 hrs., 1st semester. (GOEBEL.)

16. Denkmaler Deutscher Poesie und Prosa aus dem VIII–XII Jahrhundert.—Interpretation and lectures. (Müllenhoff-Scherer, 3d edition.)

2 hrs., 2d semester. (GOEBEL.)

17. Old Norse.—Old Norse Grammar, with readings from Old-Norse prose texts.

2 hrs., 1st semester. (GOEBEL.)

18. Edda.—Interpretation of the heroic lays of the older Edda in connection with the course on the Nibelungenlied. [Courses 17 and 18 will not be given in 1897–98.]

2 hrs., 2d semester. (GOEBEL.)

19. Gothic.—Gothic Grammar and interpretation of select passages from Wulfila.

2 hrs., 2d semester. (GOEBEL.)

20. Comparative German Grammar. — Lectures on the comparative grammar of the Old-Germanic dialects.

2 hrs., 2d semester. (GOEBEL.)

21. German Seminary.—In 1896–97 the work of the Seminary consisted of the study of the philosophical poems of Goethe and Schiller, and of Goethe's Sprüche in Prosa. Most of the members, who were twenty in number, contributed papers on literary and philological questions connected with the various subjects under discussion. In 1897–98 a special study will be made of the history of the German Volkslied.

2 hrs., both semesters. (GOEBEL.)

ROMANIC LANGUAGES.

Professor MATZKE, Assistant Professors BRUN, DAVIDSON, and JOHNSTON,* and Assistant WRIGHT.

1. Elementary French.—Whitney's Practical French Grammar, Part I, with written exercises and systematic training in French pronunciation on the basis of Matzke's Primer of French Pronunciation; Roulier's First Book of French Composition; Super's French Reader; Halévy, L'Abbé Constantin; Souvestre, Un Philosophe sous les Toits. In this course the study of the language is taken up from the beginning. Stress is laid upon the

*Beginning September, 1897.

acquisition, theoretical and practical, of a correct pronunciation, but no direct attempt is made to teach French conversation. The student's entire energy is concentrated upon the attainment of a full and accurate reading knowledge of the language, to which end grammar and composition are made systematically to contribute. Open to all, but students desiring to enter after the end of the second week, will be admitted only upon special examination.

5 hrs., both semesters. (BRUN, WRIGHT.)

2. Modern French. — *Novels:* George Sand, La Mare au Diable; Mérimée, Colomba. *Drama:* Racine, Britannicus; Hugo, Hernani; Augier, Le Gendre de Monsieur Poirier; Pailleron, Le Monde où l'on s'ennuie; Labiche, La Poudre aux Yeux. *Contes:* Fontaine, Historiettes Modernes, vol. I. *Poetry:* Bowen's Modern French Lyrics. *History of French Literature:* Duval, Histoire de la Littérature Française. *Prose Composition:* Whitney's Practical French Grammar, Part II.

A course in reading and introduction to French literature. Systematic attention will be paid to syntax and idiom. One recitation per week (the reading of modern comedies) will be conducted in French, where the texts read will be interpreted in French, and instruction in conversation will be given. Open to students who have completed course 1, or who have received credit for entrance subject 18.

5 hrs., both semesters. (DAVIDSON.)

3. Modern French. — George Sand, La Mare au Diable; Mérimée, Colomba; Fontaine, Historiettes Modernes, vol. I; Racine, Britannicus; Hugo, Hernani. Whitney's Practical French Grammar, Part II. This course is intended for students who wish to acquire a readier reading knowledge of French, but it does not admit to the more advanced courses in the department. Students, having completed course 3, who desire to register for course 4 may do so by taking in addition the two hours in course 2 which are not covered by course 3.

3 hrs., both semesters. (JOHNSTON.)

4. Classical French. — The class will begin with a study of French tragedy. There will be read Corneille's Cid, Horace, and Polyeucte, and Racine's Athalie, Phèdre, and Andromaque. When this has been completed, the class will take up Molière's Précieuses Ridicules, Le Bourgeois Gentilhomme, Le Tartufe, and L'Avare. Lectures on French Literature, mainly on the XVII

century with parallel readings from Fasnacht, Select Specimens of the Great French Writers. Open to students who have completed course 2, or its equivalent.

3 hrs., both semesters. (MATZKE.)

5. Literary Movements of the 19th Century.— Lectures, supplemented by readings and reports by the members of the class. Students should provide themselves with Pellissier, Le mouvement littéraire au XIXe siècle (Paris, Hachette, 1889), Faguet, Etudes littéraires sur le dix neuvième siècle (Paris, Lecène et Oudin, 1889), and Stapfer, Racine et Victor Hugo (Colin et Cie 1890). Open to students who have completed course 4.

2 hrs., both semesters. (DAVIDSON.)

6. Advanced Prose Composition.—Grandgent, French Composition. Open to all students who have completed course 2 or 3.

1 hr., both semesters. (JOHNSTON.)

7. French Conversation. — Practical exercises in French Conversation, based on modern French texts. Open to students who have completed course 2, or its equivalent.

1 hr., both semesters. (JOHNSTON.)

8. Introduction to Old French.—Léon Gautier, La Chanson de Roland (Tours, Mame et Fils); Chrétien de Troyes, Yvain ou le Chevalier au Lyon (Halle, Niemeyer, 1891). Open to students who have completed course 4.

2 hrs., both semesters. (JOHNSTON.)

9. Elementary Spanish.—Manning's Practical Spanish Grammar; Matzke's First Spanish Readings; Tamayo y Baus, Un Drama Nuevo; Galdós, Doña Perfecta. Open to students who have completed French course 1, or who have received credit for entrance subject 18.

3 hrs., both semesters. (JOHNSTON.)

10. Classical Spanish.—Cervantes, Don Quixote, Part I; Lope de Vega, La Estrella de Sevilla; Calderón, El Príncipe Constante; Moreto, El Desdén con el Desdén. Open to students who have completed course 9, or who have received credit for entrance subject 17.

2 hrs., both semesters. (DAVIDSON.)

11. Elementary Italian.— Grandgent, Italian Grammar and Italian Composition; Bowen's First Italian Readings; De Amicis,

Cuore; Manzoni, I Promessi Sposi. Open to students who have completed French course 1, or who have received credit for entrance subject 18. [Course 11 will not be given in 1897-98.]

3 hrs., both semesters. (DODGE.)

GRADUATE COURSES.

Courses of instruction for graduate students in Romanic philology and literature lead to the degrees of Master of Arts and Doctor of Philosophy, and are planned for the benefit of specialists, particularly of such as are looking forward to becoming college teachers of the Romanic languages. Admission to regular standing in this department presupposes an undergraduate curriculum of study which has included Latin and French, and has afforded proficiency in at least one of the principal languages of the Romanic group (French, Spanish, or Italian). In addition to this, a good reading knowledge of German (for purposes of advanced study) is requisite. In connection with their special work, graduate students will be expected to take, under the advice of their professor, such undergraduate courses in the Romanic languages as may supplement their previous studies, and also such graduate courses in related departments as will serve to broaden their general acquaintance with philology and literature.

12. **History of Old French Literature.**—Lectures on the History and development of French Literature from the beginning to the end of the fifteenth century. The course will be a continuation of that given during the second semester of 1896-97, and will be concerned mainly with Lyric Poetry and the Drama.

2 hrs., 1st semester. (MATZKE.)

13. **French Historical Grammar.**—Lectures on Old French phonology and morphology. Students should provide themselves with Schwan, Grammatik des Altfranzösischen (2d edition, Reisland, Leipzig, 1893), Suchier, Altfranzösische Grammatik (Halle, Niemeyer, 1893), Körting, Lateinisch-Romanisches Wörterbuch (Schöningh, Paderborn, 1891). One hour every week will be given up to practical philological exercises based on Suchier's edition of Aucassin et Nicolete (Paderborn, 1889).

3 hrs., both semesters. (MATZKE.)

14. Physiological Phonetics —Lectures. Students will need Sievers, Grundzüge der Phonetik (Leipzig, 1885); Beyer, Französische Phonetik (Cöthen, 1888); Paul Passy, Les Sons du Français (Paris). [Course 14 will not be given in 1897–98.]

2 hrs., 1st semester. (MATZKE.)

15. History of French Versification.—Lectures.

1 hr., both semesters. (DAVIDSON.)

16. Old French Dialects.—Lectures on the Phonology and Morphology of the Old French Dialects with practical exercises on Old French Texts.

1 hr., both semesters. (MATZKE.)

17. Old Provencal.—Translation of Old Provençal texts from Appel, Provenzaeische Chrestomathie (Leipzig, Reistand, 1895).

2 hrs., 1st semester. (MATZKE.)

18. Old Spanish.—Old Spanish Grammar with readings from Keller, Altspanisches Lesebuch (Leipzig, Brockhaus, 1890).

2 hrs, 2d semester. (MATZKE.)

19. History of the Spanish Theater.—Lectures.

2 hrs., 2d semester. (MATZKE.)

20. Seminary.—In 1896–97 the seminary was occupied with the study of Corneille. The subjects investigated were the life and times of the great dramatist, the dramatic theories of the seventeenth century, and the sources and construction of his plays. In 1897–98 the work of the seminary will be centered in the study of the Anglonorman Dialect.

2 hrs., both semesters. (MATZKE.)

ENGLISH LITERATURE AND LANGUAGE.

Professors ANDERSON, FLÜGEL, HUDSON, and LATHROP, Associate Professor NEWCOMER, and Instructors HARDY, SCHMIDT, and ————.

The courses in English are divided into two classes: (1) courses which have a general value in affording discipline and culture; (2) courses which are designed for professed students of language and literature, and from which the hours required for graduation in English must be selected.

The objects of the general courses (3, 4, 5, 6, 8, 9) are stated in detail in the list of courses. These are not to be counted as a part of the major work required for graduation in English.

The courses in literature treat the subject from two points of view. First, the works studied are regarded as significant primarily because of their appeal to permanent interests of human nature, and as therefore deserving to be interpreted for their own sake. Secondly, the authors dealt with are considered in relation to the general movements of thought and feeling in their own and other ages, the history of literature being treated as a part of universal history.

Philology is conceived of in the courses devoted to it as the attempt to recreate the inner life of the past from the evidence afforded by language. It is believed that some study of language in this spirit is requisite for the complete training of a student of literature.

For graduation in English twenty-five hours of work in the department are required. Students who make English their major subject are expected to be able before graduation to read simple prose and verse in any three of the four languages: Greek, Latin, German, French. (The facility required to pass in entrance subjects 18, 19, 20-21, 22 is the standard.) They must have such a general knowledge of the history of English literature as may be gained from course 10. Besides this, a student graduated in English is required to have a knowledge of the main facts of the history of the English language, such as may be gained from course 22.

Special students in English must be twenty years of age, and must satisfy entrance requirements 1*a*, 1*b*, 16, and either 18, 19, 20, or 22.

UNDERGRADUATE COURSES.

3. Introduction to English Prose.

3 hrs., 1st semester. (NEWCOMER.)

4. Introduction to English Prose.— Courses 3 and 4 are intended to give students a feeling for the elements of good prose style by disciplining them in the exact study of words, in the analysis of structure, and in the application of the fundamental principles of rhetoric, and by training them in the rapid, accurate, and sympathetic reading of prose. [Course 4 will not be given in 1897-98.]

3 hrs., 2d semester. (NEWCOMER.)

5. Introduction to English Poetry.— Course 5 is meant to acquaint students with the elements of poetic form, and to help them to an intelligent interest in poetry.

3 hrs., 2d semester. (NEWCOMER.)

6. Elocution.—An elementary course in elocution, including both the physical and the intellectual training requisite for effective reading and speaking. [Course 6 alternates with course 14, and will be given in 1897 98.]

1 hr., both semesters. (LATHROP.)

7. Teacher's Course in English Composition. — [Course 7 cannot be counted for graduation in English.]

2 hrs., both semesters. (HARDY.)

8. English Composition.— Course 8 gives elementary training in narration, description, and exposition. Practice in taking notes and in making syllabi and abstracts forms a part of the course, the object of which is to develop habits of observation and accuracy of thought, as well as the power of expression. [Either the Standard Dictionary or Webster's International Dictionary.]

2 hrs., both semesters. (LATHROP, HARDY, ———.)

9. Forensics.— The object of course 9 is not so much to form a part of professional training as to provide an important element in liberal culture. The literary side of argument receives as much attention as is given to the logical and technical side. Students must obtain the instructor's permission before registering for this course.

3 hrs., both semesters. (LATHROP.)

10. The History of English Literature. — A course of lectures, giving a general view of the history of English literature. This course is intended primarily for advanced students of English, but is open to others who may satisfy the instructors of their fitness.

2 hrs., both semesters. (ANDERSON, FLÜGEL, HUDSON, LATHROP, NEWCOMER.)

11. English Composition.—An advanced course, with special reference to the philosophy of style and its practical application to various forms of literary art. Students must obtain the instructor's permission before registering for this course.

2 hrs., 1st semester. (NEWCOMER.)

12. Essayists of the Nineteenth Century.—A study of the modern essay in its various aspects, based upon representative selections from Macaulay, Carlyle, Emerson, Ruskin, Arnold, Lowell, Pater, Stevenson, and Huxley.

2 hrs., both semesters. (NEWCOMER.)

14. The English Novel.—*a.* The novel in the Eighteenth Century. *b.* Scott, Dickens, Thackeray, George Eliot. [Course 14 alternates with course 6, and will not be given in 1897-98.]

3 hrs., both semesters. (LATHROP.)

15. History of the English Drama down to Shakspere.—[Pollard's English Miracle Plays (Clarendon Press); Peele's Plays and Poems (Morley's Universal Library); Marlowe's Doctor Faustus and Greene's Friar Bacon and Friar Bungay (Clarendon Press); Lyly's Endimion (Holt); Marlowe's Edward II (Holt).] [Course 15 will not be given in 1897-98.]

2 hrs., 1st semester. (HUDSON.)

16. The Contemporaries of Shakspere.—[Thayer's Best Elizabethan Plays; Jonson's Plays and Poems (Morley's Universal Library); Ford's Broken Heart (Holt).] [Course 16 will not be given in 1897-98.]

2 hrs., 2d semester. (HUDSON.)

17. Spenser.—A critical examination of his works, with a study of his character, of the esthetic and moral qualities of his poetry, and of his relative position in the history of literature.

2 hrs., 2d semester. (NEWCOMER.)

18. The Literature of the Eighteenth Century. — A comparative study of the literature of the Augustan period, and the early romantic revival. Open to those only who are familiar with either French or German. [Ward's English Poets, vol. III; the works of Dryden, Pope, Goldsmith, Cowper, in Macmillan's Globe edition. Editions of other eighteenth century authors, English and continental, in Cassell's National Library, and other inexpensive reprints, will also be used.]

3 hrs., both semesters. (HUDSON.)

19. English and American Poetry of the Nineteenth Century.—From Keats to Tennyson and Whitman. [Students must provide themselves with good editions of the works of Keats, D. G. Rossetti, Arnold, Clough, George Eliot, Tennyson,

William Watson, Lowell, Emerson, and Whitman. Morris's Earthly Paradise should also be obtained, either complete or in selections.]

3 hrs., both semesters. (HUDSON.)

20. Thesis.—In certain courses, students will be given an additional hour of credit on presentation of a satisfactory thesis embodying the result of independent work. Permission to register for thesis work must be obtained in each case from the major professor.

1 hr., either or both semesters.

21. American Literature.—A survey of American literary history, and the reading and discussion of notable works in prose and verse. Students in this course are expected to possess the works of the chief American poets, especially Bryant, Poe, Longfellow, Whittier, Emerson, Lowell, Whitman, and Lanier. [Course 21 alternates with course 7, and will not be given in 1897–98.]

3 hrs., both semesters (HARDY.)

22. Anglo-Saxon.—*a*. Anglo-Saxon Grammar and translation of select passages in prose and verse (first semester). *b*. Introduction to the study of Anglo-Saxon literature (second semester). *b* is a continuation of *a*, but is open to all students who have satisfied the instructors of their fitness. For both *a* and *b* some knowledge of either German or Latin is a prerequisite. Bright's Anglo-Saxon Reader. For course *b*, which covers the period to the Norman Conquest, Ten Brink's Early English Literature, translated by Kennedy, and Stopford Brooke's History of Early English Literature are recommended.] *c*. A shorter introduction to Anglo-Saxon Grammar is offered in the Department of Law, course 11. This course will be of service to students of English History and of the History of English Law.

3 hrs., both semesters. (FLÜGEL, SCHMIDT.)

23. Chaucer.—This course is an elementary one, and includes an outline of Middle English Grammar for the beginner; it is open to students who have taken course 22 and English History (course 12 or its equivalent). Students having completed this course will be admitted in the second semester to the advanced course in Chaucer (34*b*). [Sweet's Second Middle English Primer, and Skeat's one volume edition of Chaucer's works: The Student's

Chaucer, will be used. Besides these, Pollard's Chaucer Primer and the second volume of Ten Brink's Early English Literature, translated by W. C. Robinson, are recommended.]

3 hrs , 1st semester. (FLÜGEL.)

24. Wordsworth and his Contemporaries.—The reading and discussion of the most notable poems of Wordsworth, Coleridge, Southey, Landor, Byron, and Keats, with a view, first, to an acquaintance with this body of literature, secondly, to the spiritual, artistic, and political movement which these poets exemplify and interpret. [Ward's English poets, vol. IV. The student should also be provided with a good edition of each of the poets mentioned above. Macmillan's new single volume editions of Coleridge and Wordsworth, are recommended.] [This course will not be given in 1897–98.]

3 hrs., 1st semester. (ANDERSON.)

25. Shelley and Browning.—For this course an acquaintance with the authors treated in course 24 is presupposed. Shelley and Browning are treated as comprehensively as possible, and their spiritual relationship emphasized. The necessary books are Dowden's edition of Shelley's Poems (Macmillan) and Scudder's edition of Robert Browning's Works (Houghton, Mifflin & Co.) [This course will not be given in 1897–98.]

3 hrs , 2d semester. (ANDERSON.)

26. Milton.—A critical examination of the poems and of some of the prose works of John Milton, and a study of his life and times with a view to a realization of his character, a comprehension of his historical importance, and an appreciation of the classical quality of his poetry. [Masson's smaller edition of Milton's Poems (three vols.), either Pattison's or Garnett's or Stopford Brooke's account of Milton's life and works, Hales's edition of the Areopagitica, and Verity's annotated texts (Cambridge Press.) [Course 26 alternates with courses 24 and 25, and will be given in 1897–98.]

3 hrs., both semesters. (ANDERSON.)

27. Shakspere.—A comprehensive review of many of the plays and poems of William Shakspere, including a study of his life and an attempt to trace the growth of his mind and the development of his art. Students must obtain the instructor's permission before registering for this course. [The principal

text books are Dowden's Shakspere Primer, Saintsbury's Elizabethan Literature, the Leopold edition of Shakspere with Dr. Furnivall's Introduction. For the class-room, the Temple edition of single plays is recommended. Every student should also possess at least one volume of Furness's Variorum Edition.]

3 hrs., both semesters. (ANDERSON.)

GRADUATE COURSES.

In connection with the following courses, opportunity will be afforded to graduate students to pursue lines of reading and investigation under the guidance of the professors. The courses offered lead to the Doctor's degree, but the specific requirements for the degree must vary with every individual. In no case will the degree be conferred except upon the completion of a thesis embodying the results of original work of a high order. More definite information will be furnished by the members of the English staff to intending students who write giving the necessary information respecting their purposes and equipment.

28. Shakspere: An Introduction to Textual Criticism.—Exact reprints of the quarto and folio texts of a few selected plays are collated, textual obscurities and verbal difficulties are carefully discussed, and a complete edition of one play is constructed by each student from the original versions. Following upon the textual study of each play is a discussion of the *dramatis personæ*, an analysis of the author's dramatic methods, and an examination of various elements of his literary power. Open to students who have completed course 27 or its equivalent. [The necessary books are Vietor's parallel-text reprints of Hamlet and Lear, Daniel's of Romeo and Juliet (New Shakspere Society), and the reduced fac-simile of the first folio edition of the plays. Furness's Variorum Shakspere and Schmidt's Shakspere Lexicon are recommended.]

2 or 3 hrs., both semesters. (ANDERSON.)

29. History of English Lyrical Poetry, from the Earliest Times to the Middle of the Sixteenth Century.—Lectures and interpretations. [Students will need copies of (1) Grein's Bibliothek der Angelsächsischen Poesie, vol. 1 (ed. Wülker), (2) An Old English Miscellany (ed. R. Morris), (3) Altenglische Dichtungen des MS Harl. 2253 (ed. Böddeker), (4) Percy's

Reliques (the editions by Wheatley or by Schröer are especially recommended), (5) Flügel's Neuenglisches Lesebuch, vol. I.]

3 hrs., both semesters. (FLÜGEL.)

30. History of Old and Middle English Literature and Historical Grammar of the English Language.—The period covered is that from the Norman Conquest to the Middle of the Sixteenth Century. [Books used and recommended are: (1) Whitney's Life and Growth of Language (International Science Series); (2) Sayce's Principles of Comparative Philology; (3) Sievers's Anglo-Saxon Grammar; (4) Ten Brink's Chaucer's Sprache und Verskunst; (5) Ten Brink's Early English Literature, vols. 1, 2 and 3; (6) Morris and Skeat's Specimens of Early English Literature, 2 vols.] [Course 30 will not be given in 1897-98.]

3 hrs., both semesters. (FLÜGEL.)

31. Beowulf.— The edition used is Harrison and Sharp's. A reading knowledge of German is a pre-requisite for this course, as well as for 32*a*.

2 hrs., both semesters. (FLÜGEL.)

32a. History of English Meters.—From Anglo-Saxon times to the middle of the Sixteenth Century. [Course 32*a* will not be given in 1896-97.]

2 hrs., 1st semester. (FLÜGEL.)

32b. English Palæography.—Lectures and exercises. [Books recommended: (1) Skeat's Twelve Fac-similes of Old English MSS., (2) Thompson's Handbook to Greek and Latin Palæography (International Science Series).] [Course 32*b* will not be given in 1897-98.]

2 hrs., 2nd semester. (FLÜGEL.)

33. Introduction to the Study of English Philology.

2 hrs., both semesters. (FLÜGEL.)

34. English Seminary.

a. King Alfred and his Circle. Lectures and Interpretations. [Students will need copies of the following works: (1) Pauli's Alfred the Great (ed. Thorpe, Bohn's Antiquarian Library); (2) Alfred's Version of Boethius (ed. Fox, Bohn's Ant. Lib.); (3) Turk's ed. of the Legal Code of Alfred the Great; (4) Earle

and Plummer's Saxon Chronicles; (5) Tho. Miller's ed. of the old English Version of Bede's Ecclesiastical History; (6) Baedae Historia Ecclesiastica (ed. A. Holder, or ed. G. H. Moberly.] [Course 34 *a* will not be given in 1897–98.]

4 hrs., both semesters. (FLÜGEL.)

b. Chaucer. This course will be devoted to a careful study of some of Chaucer's works, their sources and texts. A reading knowledge of Latin and Modern French and some knowledge of Old French is expected of the members of this class.

2 hrs., 2d semester. (FLÜGEL.)

c. The Early English Romantic Movement. This course will be devoted to an investigation of the growth of Romanticism in English Poetry from the time of Pope to the publication of the Lyrical Ballads (1798). [Course 34 *c* will not be given in 1897–98]

2 hrs., both semesters. (HUDSON.)

d. Tennyson. This course will be devoted to a comprehensive study of the entire body of Tennyson's works. Among the principal subjects considered will be the characteristics of his genius and art; the fundamentals of his ethical, social, and religious teaching; his relation to contemporary movements in life and thought; his indebtedness to preceding poets, classical and modern; and his influence, spiritual and technical, upon his age.

2 hrs., both semesters. (HUDSON.)

e. Tennyson and Browning. In 1893–94 a comparative study of Tennyson and Browning was undertaken. Papers treating of Tennyson's indebtedness to a number of preceding poets (Homer, Theocritus, Vergil, Dante, Shakspere, Milton, Spenser, Wordsworth, and others) were prepared and discussed; a detailed examination was made of Browning's *Sordello; Paracelsus* and many other of Browning's earlier poems and dramas were read; the dramatic works of the two poets were compared; likewise the *Dramatic Lyrics* and the *English Idylls;* their use of the Dramatic Monologue was examined, and the contrast between them as interpreters of the more positive thought of the age was abundantly illustrated. [Course 34 *e* was continued in 1896–97. It will not be given in 1897–98.]

3 hrs., both semesters. (ANDERSON.)

BIBLIOGRAPHY.

1. General Bibiography.—The aim of this course is to give practical aid to students in the preparation of bibliographies. Bibliographical method, the bibliographies of special subjects, and the principal books of reference will be discussed and individual work carried out under direction in the University Library.

2 hrs., 1st semester. (TEGGART.)

PSYCHOLOGY.

Professor ANGELL.

1. General Psychology.—Recitations and Lectures. Course 1 may be taken with or without laboratory work. Without laboratory work the course will count one hour of credit a semester; with laboratory work, two hours a semester.

2 hrs., both semesters. (ANGELL.)

2. Beginners' Laboratory Work.

1 hr., both semesters. (ANGELL.)

3. Advanced Psychology. — The Feelings. Lectures and preparation of abstracts and essays. Course 4 in laboratory work is required in connection with this course. Open to those who have completed course 1 or its equivalent.

2 hrs., both semesters. (ANGELL.)

4. Laboratory Work in Psychology. — In connection with course 3.

3 hrs. (minimum), both semesters. (ANGELL.)

5. Methods of Sensation Measurement.—During the second semester the course discusses statistical methods so far as is possible without the aid of the higher mathematics. Course 5 takes up practically the methodology of Psychology.

1 hr., both semesters. (ANGELL.)

[Courses 1 and 2 are based mostly on experimental work in Psychology during the last ten years. Each hour of laboratory work (courses 2 and 3) usually requires from one to two hours additional spent in preparing materials and apparatus and in collating results.]

ETHICS.

Professor GRIGGS.

The aim of this Department is the study of the world of higher human activities, to find the laws that determine the life and development of the individual in relation to the universe, and to attain as much as may be of that higher wisdom of life which makes possible a sympathetic appreciation of concrete human experience.

The material for study consists of the facts of conduct and ideals as given in present life and in history. Literature and other direct embodiments of human life in artistic form furnish invaluable material for the investigation of ethical questions. Philosophy, in its reflective interpretation of the facts of life, is an important aid, but is by no means the main basis for the work.

This body of material is studied in the spirit which inspires the work of physical science; and the same methods of investigation are employed.

While the purpose is thus to make of Ethics an inductive science, studying a definite province of life, it is nevertheless distinctly recognized that this aim is not attained by the mere transference, into the sphere of Ethics, of the results of other sciences. To understand the higher human life it is not enough to study its sources in the physical world below man; but the facts in the world of human thought, emotion, and will must themselves be studied in the light of all that can be learned of their origin and development.

1. **Introduction to Ethics.**—In this course a general discussion of ethical questions is given. The lectures are tentative and not dogmatic in character, and are intended to suggest and stimulate thought, rather than to give final conclusions. The present condition of ethical problems is discussed, and an effort is made to show what light has come to ethical investigations from the results and methods of modern science. The subjects considered include: The Meaning of Ethics, The Methods of Ethical Science, The Basis of the Ethical Life, The Evolution of Moral Ideas, Religion and Ethics. Students are required to read Plato's Apology, Crito, and Phaedo, and Aristotle's Nicomachean Ethics.

2 hrs., 1st semester. (GRIGGS.)

2. **Ethics of Personal Life.**—A discussion of the more important problems involved in the daily life of the individual.

The questions considered include : The Nature of Personal Life, The Relation of Personal Ideals to Social Movements, Self-Culture, The Vocation, The Ethics of the Personal Relations, The Laws of Life.

2 hrs., 2d semester. (GRIGGS)

3. **An Ethical Study of Autobiography.**—A study of the more permanent questions in the life and development of the individual, as presented in revelations of personal experience. The Autobiographies of Goethe, Benvenuto Cellini, Tolstoi, Amiel, Mill, Marie Bashkirtseff, and others are read and discussed. Additional autobiographies are assigned for independent study, and reports expected upon them. An effort is made to cover, in the whole of the work, a wide range of vocational activities, and a considerable variety of types of men and of experience.

3 hrs., both semesters. (GRIGGS.)

4. **Spinoza and Kant.**—A critical study of Spinoza's Ethic, and of the more important writings of Kant bearing upon ethical theory.

3 hrs., 1st semester. (GRIGGS.)

5. **Modern English Ethical Philosophy.**—A comparative study of the most important modern English theories of Ethics, including the treatises of Spencer, Sidgwick, Stephen, Martineau, Green, and others. Two authors are selected for class discussion, and each student is expected to carry on the independent study of some other author, reporting from time to time to the class upon his special work. The texts for class discussion will be varied from year to year ; so that students who wish to do so, may elect the course during two years.

3 hrs., 2d semester. (GRIGGS.)

6. **Dante.**—A study of the Divine Comedy as at once the greatest expression of the mediæval world with its ideals and aspirations, and as the noblest of all the efforts to see the facts of human life "under the aspect of eternity."

2 hrs., 1st semester. (GRIGGS.)

7. **Goethe.**—A study of Faust, with informal interpretative lectures. Faust is chosen, as one of the supreme studies of those universal human problems which belong to all epochs ; and at the same time as embodying our modern world, in its characteristic tendencies, more completely than any other great work of art.

2 hrs., 2d semester. (GRIGGS.)

8. Seminary.—Devoted to special researches in the history of conduct and ideals. The work for 1897–98 will be given to the history of morals in the Italian Renaissance. The type of life and ideal of life, in Italy during the period, will be studied in characteristic expressions in conduct, religion, social relations and institutions, philosophy, and the fine arts. Each student will be assigned one main subject each semester for exhaustive study; the results to be reported to the seminary, and discussed at length. This course is open to all advanced students in Ethics, and to others who have considerable training and experience in doing independent work in the humanistic sciences.

3 hrs., both semesters. (GRIGGS.)

BIONOMICS.

President JORDAN, and Professor THOBURN.

The name Bionomics has recently been proposed by Patrick Geddes to include the science of descent and adaptation in living beings. It deals with organic adaptation and evolution. The courses which follow are designed to cover all the phases of organic activity. In the case of man an attempt is made to base the study of the higher intellectual, social, and religious life on the exact knowledge of his animal nature, and to apply the chief factors of evolution to the interpretation of human tendencies and relations.

In addition to the courses named below others adapted to the peculiar needs of the student will be suggested.

[**1. General Zoology.**—See courses 1 and 2 in Zoology.]

[**2. Elementary Botany.**—See course 1 in Botany.]

[**3. Histology.**—See course 6 in Physiology.]

[**4. Embryology.**—See course 5 in Zoology.]

5. Organic Life.—Lectures on the origin of species, the laws of life, and the factors of organic evolution. Course 5 will count three hours per semester to those who prepare a satisfactory thesis on some of the subjects discussed. Students not electing the thesis work will receive two hours credit.

3 hrs., both semesters. (JORDAN, THOBURN.)

6. Applied Bionomics.—The laws of organic life applied to current movements in the social and political world. Lectures, required readings from contemporary literature, and thesis. Open to all students who have had course 5.

2 hrs., both semesters. (JORDAN, THOBURN.)

[**7. Applied Sociology.**—See courses 12, 13, and 14 in Economics and Sociology.]

8. Religion.—A study of the laws that govern the growth of religion and the influences and factors that affect its development. The course consists of lectures, critical discussions, and written work.

2 hrs., both semesters. (THOBURN.)

9. The Teachings of Christ.—The life of Christ, and a study of Christian Ideals and their application to human life.

2 hrs., both semesters. (THOBURN.)

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*EDUCATION.

Professor EARL BARNES, Instructor DARRAH, and Assistant SHELDON.

1. History of Civilization in Europe.—Deals with the historical development of man's political, religious, industrial, social, and moral ideals and his attempts to realize them through education. The work will consist of studies on such records as are available in the library, and on leaflets prepared for the course, with lectures.

2 hrs., both semesters. (E. BARNES.)

2. History of Education in America.—The first semester is devoted to a study of the origin of American civilization and of its growth during the formative period. The second semester is

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*This announcement covers the work actually given during the year 1896-97. It will be modified during the year 1897-98, owing to the absence of Prof Barnes on leave of absence. Prof. Edwin Starbuck will present courses on the history of religion, and on general pedagogical psychology. Instructor Margaret Schallenberger will return and take up her work in the department, adding some new courses on educational statistics and the history of education. Assistant Louise Maitland will offer two single semester courses, one on the æsthetic activities of childhood, the other on some French classic. Prospective students wishing more explicit information can obtain it by writing directly to the department.

devoted to a discussion of present tendencies and movements in American education. The work of the course consists of lectures and of special papers intended to introduce the student to modern methods of research. Designed for first year students in education, but open to all those interested in current educational topics.

2 hrs., both semesters. (SHELDON.)

3. The Psychology of Childhood.—This course will deal with the physical, intellectual, and moral development of children. The work will consist of original studies on the children in the school connected with the department, or on children otherwise available, of statistical studies on data concerning the development of the senses, emotions, etc., collected from various schools, and of studies in the literature of the subject. This course presupposes an elementary training in psychology.

2 hrs., both semesters. (E. BARNES, DARRAH.)

4. The Practice of Teaching.—In this course method will be considered as founded upon the principles formulated from the study of children and from an examination into the nature of the subjects of the curriculum. Spencer's "Education" and McMurry's "General Method" will be read by the class.

2 hrs., 1st semester. (DARRAH.)

5. Secondary Schools.—Open to students in their last year of university work. This course will deal with the aim, the methods, and the course of study of secondary schools, and will include series of lectures by various members of the Faculty upon their special fields of work.

2 hrs., 2d semester. (DARRAH.)

6. American School Organization.—This course deals with the present problems of school administration. The California school law is taken as the basis of the work. A considerable portion of the time is devoted to special investigations.

2 hrs., 2d semester. (SHELDON.)

7. Pedagogical Psychology.—A comparative study of the various schools of psychology with a view to determining the educational values of their teachings. Special attention will be given to the work of Herbart. Open to students who have had course 3 or its equivalent.

2 hrs., both semesters. (E. BARNES.)

8. Comparative Study of European School Systems.—A technical study of comparative school administration. Open only to advanced students.

2 hrs., 1st semester. (SHELDON.)

9. Pestalozzi.—This course is intended for students who wish some advanced study in the history of educational theory with practice in reading German. *Lienhard and Gertrud* is read. Open to students who have had course 1 in Education or its equivalent.

2 hrs., 1st semester. (DARRAH.)

10. The Aesthetic Activities of Childhood.—George Sand's "Histoire de ma Vie" is read by the class. This course is intended for students who wish a line of advanced work in the psychology of childhood together with practice in reading French. Open to all who have had course 3 in Education or its equivalent.

2 hrs., 2d semester. (DARRAH.)

11. The Historical Development of Method.—This course will deal with the evolution of the various subjects of the school curriculum. Open to students who have had course 1 or course 4 in Education, or are otherwise prepared for the work.

2 hrs., 2d semester. (DARRAH.)

12. Seminary.—Devoted to special studies in education. Intended for advanced students or for teachers of considerable experience.

2 hrs., both semesters. (E. BARNES.)

[**13. Education and Society.**—See course 3 in Sociology.]

[**14. School Hygiene, Anthropometry, and Physical Training.**—See course 4 in Department of Hygiene and Organic Training.]

[**15. Teacher's Course in General Physiology.**—See course 10 in Department of Physiology.]

[**16. Teacher's Course in Latin.**—See course 13 in Latin.]

[**17. Teacher's Course in English.**—See course 7 in English.]

Under the present ruling of the State Board of Education graduates of this University who are recommended by the Faculty and who have had at least six hours work in the Department

of Education for one year, may receive certificates to teach in California without examination. Students intending to prepare themselves for such certificates are expected to take course 1 or 2, course 3 or 13, and one of the practical courses.

Major students in the department are expected to have a reading knowledge of French and German before graduating. Special work will be arranged for graduate students. Teachers not candidates for a degree, but wishing to carry on special studies in the department, will be given every assistance which the department can offer.

HISTORY.

Professors HOWARD and SHOW, and Assistant Professors M. S. BARNES, SPENCER, and KRIEHN.

1. **Roman Institutions.** — From the earliest times to the end of the middle empire (A. D. 284.) Course 1 is primarily a study of political and social institutions, and assumes some knowledge of the general history of Rome. It is designed to afford a general training in scientific method. The students are guided in the systematic use of books. Class work consists of lectures by the instructor, special reports, and written exercises by the students. All students in the course having History for the major subject are expected to register for course 20.

3 hrs., both semesters. (SHOW.)

2. **Early Mediæval Institutions.**—Open to all who have taken course 1 or an equivalent. Course 2 covers the period from the fourth to the tenth century (A. D. 284–888) ending with the overthrow of the Carolingian monarchy. Beginning with the organization of the later Roman Empire, it traces the main development of primitive Germanic institutions, the rise of the mediæval church, the expansion of the Frankish empire, the beginning of feudalism, and the foundation of the great mediæval states. The methods of instruction are the same as in course 1. Ability to use German and French books, though not required, is of great service in this course. [Course 2 will not be given in 1897–98.]

2 hrs., both semesters. (SHOW.)

3. **Expansion of Europe on the Shores of the Pacific.**—This is a general course, open to all, on the approval of the professor in charge, and giving a general view of the development of European life and influence on the shores of the Pacific, with special attention to that development on the Pacific Slope of North America. The development of Siberian Russia, the opening of China and Japan, the growth of Australia, the fur trade of the Northwest, and the California Missions, are some of the topics which will be treated. [This course will not be given in 1897-98.]

2 hrs., 1st semester. (M. S. BARNES)

4. **History of the Main Political and Intellectual Movements of the Nineteenth Century.**—This is a general course, open to all, on approval of the professor in charge. The course deals with the history of France, Italy, and Germany since 1789, the Eastern Question, and the expansion of Europe. [This course will not be given in 1897-98.]

2 hrs., 2d semester. (M. S. BARNES.)

5. **Church and State in the Middle Ages.**—Course 5 is open to graduates and undergraduates who have taken course 2 or its equivalent. It considers the relations of the early church to the pagan and Christian empires, the rise of the papacy, the foundation of the temporal power, the theory of the Holy Roman Empire, the conflicts of the church and civil power, and similar topics. After the ninth century, special stress is laid on the relations of the papacy to the German empire. Students are guided in research work on selected topics.

2 hrs., both semesters. (SHOW.)

6. **Art and Culture of the Italian Renaissance.**—Course 6 is designed to give training both in history and in the principles of art criticism. Due consideration will be given the political and economic conditions of the period, and to the revival of literature and learning which preceded the artistic development. The lives and characteristics of the chief masters of the Italian Renaissance will be especially considered; their works will be studied, as far as possible, from photographs of the originals. A sketch of the spread and development of the Renaissance in other countries of Europe will be subjoined to the course. Open to all third and fourth year and graduate students; to others on consultation with the instructor.

2 hrs., both semesters. (KRIEHN.)

7. American Political and Institutional History to 1775.—Course 7 is open to third year students and to graduates. Without excluding other topics, it is mainly devoted to the constitutional history of the English colonies. The origin and development of the various types of local organization receive special attention. An attempt is made, in this period, to trace the beginnings of our present State and National Constitutions.

2 hrs., both semesters. (HOWARD.)

8. Constitutional and Political History of the United States since 1775.—Course 8 is open to graduates and to undergraduates who have had courses 1 and 2, or their equivalent. It should, when practicable, be preceded by course 7. It is a study of the Revolution, the Critical Period, and the formation and development of the National Constitution. This course is important for the study of law.

3 hrs., both semesters. (HOWARD.)

9. History of the English Constitution to 1485.—Course 9 is open to graduates and advanced undergraduates. It is designed to afford a detailed study of the origin and development of English institutions, local and national, to the end of the Middle Ages. This course is especially important as a preparation for the study of law. [Course 10 will not be given in 1897-98.]

2 hrs., both semesters. (HOWARD.)

10. History of the English Constitution since Henry VII.—Course 10 alternates with course 9, and is open to graduates and to advanced undergraduates. It is designed to afford a detailed study of the growth of the English Parliament and the Cabinet system. Particular attention is given to the constitutional results of the Puritan Revolution and to the existing forms of local government and administration. This course is also important as a preparation for the study of law.

2 hrs., both semesters. (HOWARD.)

11. The French Revolution.—With special reference to its causes and its constitutional experiments. Open to students having a fair knowledge of general European history.

2 hrs., both semesters. (HOWARD.)

13. History of England Since 1485.—The aim is to trace political and social development. The internal history of the country is traced, but the chief point of view in the last two

centuries is the industrial and colonial expansion, and thus the subject is studied in its European and American relations. Course 13 is open to all students, and may be taken by first year students instead of course 1; it is especially recommended to those desiring a general course.

2 hrs., both semesters. (SPENCER.)

14. **History of the Protestant Reformation.**—This course begins with the study of the fundamental principles of the Reformation, especially as seen in Luther, Zwingli, and Calvin. The origin, principles, and growth of the various sects within Protestantism are traced. Special attention is paid to the Counter-Reformation, including the Council of Trent, the Jesuits, the Inquisition, and the Index. The economic and intellectual relations of the Protestant movement and the political and religious struggles growing out of it are traced to the close of the Thirty Years' War.

3 hrs., both semesters. (SPENCER.)

15. **History; Its Nature, Method, Development, and Tools.**—This course is especially intended for teachers of history, and will include not only philosophical, but practical discussions. Bibliographical aids, and methods of reading and taking notes will be carefully considered. [This course will not be given in 1897-98.]

1 hr., 2d semester. (M. S. BARNES.)

16. **Practical Course in Pacific Coast History.**—The work of this course is open, on invitation, to students who have had course 3, or who seem otherwise specially qualified. The work consists in developing some special aspect of the subject by coöperative investigation under the lead of the Professor.

1 hr., 1st semester. (M. S. BARNES.)

17. **Comparative Constitutional Law.**—This begins with the study of the growth of constitutionalism, of representative democracy, and of federalism in the last century, tracing the tendencies of political development in both central and local government. The main work of the course is the comparative study of constitutions, developing the principles applied in the organization, powers, and relations of the legislature, the executive, and the judiciary.

3 hrs., both semesters. (SPENCER.)

18. Development of Political Theories in the Seventeenth and Eighteenth Centuries.— After a consideration of the differences between the mediæval and the modern state and of the point of view of mediæval writers on politics, a survey will be made of the ideas of the sixteenth century and of the revival of the conception of the Law of Nature. The course will consist mainly of the study of English and French political writers, especially Hooker, Hobbes, Milton, Harrington, Locke, Bossuet, Montesquieu, Rousseau, and Bentham. The point of view will be the conflict between conservative or absolutist and liberal or democratic tendencies, and the different uses made of the notions of natural law and of social compact as foundations for opposing views will be investigated. The attempt will be made carefully to trace the connection of theories with practical politics, whether as cause or as result.

2 hrs., both semesters. (SPENCER.)

19. Department Seminary. — The Seminary is designed primarily to afford a practical training in methods of historical research through the use of original materials; and it combines the advantages of a University Historical Society. The distinctive work of graduates falls mainly under direction of the Seminary. On invitation it may be taken by fourth year students in History and by others who are deemed qualified. All the instructors in the Department will attend as members and leaders. The work at the weekly sessions will consist of the presentation and discussion of papers, reports, book reviews, and similar results of independent research. A record of proceedings will be made by the Secretary. Members of the Seminary are not expected to register for course 20. The work of the year 1897-98 will fall in two main divisions: (*a*) studies in historical methods (first semester); (*b*) student reports on thesis investigations (second semester).

2 hrs., both semesters. (HOWARD, SHOW, M. S. BARNES, SPENCER, KRIEHN.)

20. Thesis or Research Work.— In all courses in History, unless otherwise specified, students will be given an additional hour of credit, on presentation of a satisfactory thesis embodying the results of independent work. Permission to register for thesis work must be obtained in each case from the major professor. As a rule, every student taking History as a major subject is required to register for thesis work; but no one should register

until after consultation with the instructors in the courses which he proposes to take. In special cases permission will be given to register for two hours. When a student is taking two or more courses in History the same semester, he may select his thesis in connection with either of them. Topics for independent investigation are suggested in connection with the various courses in the Historical Department. Registration for thesis work is not intended to exempt students from such incidental reports or discussions as may be required in connection with any course.

1 or 2 hrs., each semester.

21. Social and Economic History of England during the Middle Ages.— The main weight of the course will be placed on economic evolution, viz: the growth of agriculture, industry, and commerce, and the relation of the state thereto. It will comprise a detailed treatment of such subjects as the manorial system, mediæval gilds, taxation, and the rigid state control of industry and commerce. These will be supplemented by selected culture topics on education, art, and science, particularly economic theory. The condition of the masses is held constantly in view. [Credits given for courses 21 and 22 may be counted as major work in Economics.]

3 hrs., 1st semester. (KRIEHN.)

22. Modern Economic Development in England and the United States.— A continuation of course 21, along the same lines. It will treat particularly the restrictive legislation and politics by which England acquired her industrial and commercial supremacy; the attempted social revolution of the transitional period. Other topics studied will be the English poor relief, financial policy, the industrial revolutions, and present labor problems. American economic evolution will be treated along the same lines and with equal fullness.

3 hrs., 2nd semester. (KRIEHN.)

23. History of Europe in the Seventeenth and Eighteenth Centuries.— This course will trace political history and international relations from the peace of Westphalia to the French Revolution. A special study will be made of the rise of Russia under Peter the Great and Catherine II., of Prussia under Frederick II., and of the beginnings of the conflict between Prussia and Austria for the headship of Germany. The period

will be studied as one in which the "Old Regime" was breaking up in Western Europe in preparation for the new era of individualism and democracy. From this point of view will be studied the growth of the maritime, commercial, manufacturing, and colonial ascendancy of England, the progressive intellectual movement in England and in France, the religious and humanitarian developments, the industrial revolution, and the breakdown of the restrictive economic system in favor of arrangements based on freedom and individualism. [Course 23 will not be given in 1897-98.]

2 hrs., both semesters. (SPENCER.)

24. Constitutional History of Germany in the Middle Ages.—Open to all who have taken course 2 and who have a good reading knowledge of German. Course 24 begins with the tenth century and has for its main theme the constitutional development of mediæval Germany. Instruction is based on the text of Schröder's *Lehrbuch der deutschen Rechtsgeschichte,* with collateral use of Waitz, Brunner, and other modern writers. One two-hour session each week, to be fixed by the class.

2 hrs., both semesters. (SHOW.)

25. History of France in the Middle Ages.—Course 25 alternates with course 24, and is open on the same conditions. Beginning with the later Carolingian period, it traces the growth of feudal institutions in France, the rise of the Capetian monarchy, the influence of the Crusades, the wars with England, closing with the death of Charles VIII (A. D. 1498). [Course 25 will not be given in 1897-98.]

2 hrs., both semesters. (SHOW.)

26. Practical Course in Mediæval History.—Course 26 may be taken only by permission of the instructor. Reasonable facility in reading Latin, German, and French, is indispensable. The course will center each year on the critical study of some characteristic historical composition of the Middle Ages. For 1896-97 the class engaged in making an accurate English translation, with necessary literary and historical notes, of the *Historia Francorum* of Gregory of Tours. The same author will be studied for 1897-98. The method of instruction will be entirely informal and practical. One two-hour session each week, to be fixed by the class.

2 hrs., both semesters. (SHOW.)

27. Art and Culture History of the Middle Ages.— This is a general course, with specialization in the development of art and culture, along the same lines noted in course 6. In its political aspect it is intended to be a continuation of course 2, and will continue the political, social, and economic development begun in that course. The artistic instruction, however, will include the entire Middle Ages. The development of architecture will be studied from Dehio and Von Bezold's architectural plates and from lantern slides; that of painting and sculpture from photographs and engravings of the originals. [Course 27 alternates with course 6, and will not be given in 1897-98.]

2 hrs., both semesters. (KRIEHN.)

28. Seminary Course in Art History.— This course is intended to afford special training in art history and criticism by an exhaustive study of the works of one or more of the chief masters of the Italian Renaissance. The subjects of study will change from year to year; in 1897-98 Michelangelo and Raphael will be considered. The work will include a detailed study of the lives of these masters, with Vasari's Lives as a basis, supplemented by their poems and correspondence. But most research will be devoted to their productions, real and attributed, in drawing, painting, sculpture, and architecture. [Course 6 may be taken only on consultation with the instuctor.]

2 hrs., both semesters. (KRIEHN.)

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*ECONOMICS AND SOCIOLOGY.

Professors WARNER, ROSS, and POWERS, and Assistant Professor M. R. SMITH.

ECONOMICS.

1. Elements of Economics.—*a.* The principles of economics will be presented mainly by discussion, supplemented by lectures and collateral reading. (Fall semester.) *b.* Applications of these principles to present problems, especially the labor movement and the industrial policy of modern states. (Spring semester.) Students who take their major in this department should begin with course 1, usually in their first year.

3 hrs., both semesters. (POWERS.)

2. Money and Banking.—*a.* The origin and development of money; the precious metals, their history and present status; bimetallism, government notes, the history of government issues and present problems arising from them. (Spring semester.) *b.* The history and practice of banking. Bank notes, their history and the principles governing their issue. Bank discounts and other bank functions. (Fall semester.) Open to all students.

2 hrs., both semesters. (POWERS.)

3. Public Finance.—*a.* The history and theory of taxation, its methods and proposals for their reform. Other sources of government revenue. Especial attention will be paid to municipal revenues in America and Europe. (Fall semester.) *b.* The management of public debts, and other problems of financial administration. Public expenditure, its objects and results. (Spring semester.) Open to all students.

2 hrs., both semesters. (POWERS.)

4. Labor.—The history of labor and industrial organization. *a.* Beginning with the earliest forms of labor, the differentiation of industrial classes will be traced down to the present century with especial reference to the efforts which have been made to determine or modify their status. (Fall semester.) *b.* The industrial reorganization of the nineteenth century; the labor movement; socialism; present tendencies and prospects. (Spring semester.)

2 hrs., both semesters. (POWERS.)

5. Commercial Legislation. — A history of the laws in furtherance or restriction of trade between nations. *a.* Ancient and mediæval legislation. The origin and development of the commercial policy of modern nations, especially those of Europe, and the results of this policy. (Fall semester.) *b.* The

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*The following schedule, which is subject to revision, indicates the order in which certain courses will probably be given:

1897–98	1898–99	1899–1900
Economics 1	Economics 1	Economics 1
Economics 2	Economics 3	Economics 4
Economics 7 & 8		Economics 5
Sociology 11	Sociology 12	

commercial policy and legislation of the United States from the earlier settlements to the present time with especial reference to the origin, growth, and results of the protective tariff system. (Spring semester.) Open to all students.

2 hrs., both semesters. (POWERS.)

6. **Transportation.**—*a.* A study of the laws of movement and of the economic, social, and political consequences of improvements in transportation. Special studies will be made on roads, waterways, and street railways. (Fall semester.) *b.* A study of railroad problems. Extensive use will be made of the Hopkins Library of Railroad Literature, now made accessible by the printed catalogue. (Spring semester.) [Not given in 1897-98.]

3 hrs., both semesters. (ROSS.)

7. **Socialism.**— The history of socialistic experiments and the development of socialistic theory, with a careful inquiry into the latter in the light of economic and sociological principles.

2 hrs., 1st semester. (POWERS.)

8. **Consumption.** — An investigation of the phenomena of enjoyment and cost with reference to their bearing on the production of wealth and the general prosperity of society. Attention will be given to problems of luxury, and to certain phases of charity and socialism as affected by the principles thus reached.

2 hrs., 2d semester. (POWERS.)

9. **Practical Politics.**— Lectures and discussions on prominent political issues before the country, especially those of an economic character. (Given only in years when a general election is held.) Open to all students.

2 hrs., 1st semester. (POWERS.)

10. **Personal Economics.**— The relation of the individual to wealth, especially to its acquisition and its use; together with the reactions of different standards of living upon the persons concerned.

2 hrs., 1st semester. (WARNER.)

11. **Economic Theory.**— A study of distribution as treated by recent writers. Böhm-Bawerk's *Positive Theory of Capital* will be the text. Training in rigid economic analysis will be kept in

view. No student below fourth year may enter except by permission.

2 hrs., 1st semester. (Ross.)

12. Contemporary Production.—Studies in division of labor, organization, machinery, concentration, localization, invention, risk, insurance, credit, corporate and trust management, public enterprise, etc., as seen in the industry of to-day. The work will be as concrete and practical as possible.

2 hrs., 2d semester. (Ross.)

13. Corporate Industry.—A comparative and historical review of corporation law in its economic aspects. The course is designed as a preparation for the study of Railroad Problems or advanced work in the study of corporations.

3 hrs., 1st semester. (Warner.)

14. Thesis.—In certain courses students will be given an additional hour of credit on presentation of a satisfactory thesis embodying the results of independent work. Permission to register for thesis work must be obtained in each case from the major professor. Required of major students in their third year.

1 hr., either semester.

15. Seminary.—The subject for study in 1897-98 is "The International Division of Labor;" Theses, book reviews, reports, economic news. Required of graduates and fourth year students having their major in this department. No registration except at beginning of the academic year.

2 hrs., both semesters. (Warner, Ross, Powers, M. R. Smith.)

16. Social and Economic History of England during the Middle Ages.—[See History 21.]

3 hrs., 1st semester. (Kriehn.)

17. Modern Economic Development in England and the United States.—[See History 22.]

3 hrs., 2d semester. (Kriehn.)

SOCIOLOGY.

1. Sociology of the Family.—A study of the development and conditions of the modern family. Lectures and one required paper. Open to all students.

2 hrs., 1st semester. (M. R. Smith.)

2. Principles of Household Management.—Lectures and assigned reading on domestic architecture, house decoration and furnishing, sanitation, food and dietaries, domestic labor, and household finance. [Not given in 1897-98.]

2 hrs., 2d semester. (M. R. SMITH.)

3. Education and Society.— Lectures and reading. A study of the ruling tendencies in present social development and their relation to the aims of the teacher. Breadth, culture, morality, citizenship, industrial efficiency, assimilation, and individuality will be presented as educational aims.

2 hrs., 1st semester. (ROSS.)

4. Crime and Penology.— Lectures and one required paper. A statistical and sociological study of the criminal, the causes of crime, and the means of punishment and reformation. Open to students who have had one year's work in the department. [Not given in 1897-98.]

3 hrs., 1st semester. (M. R. SMITH.)

5. Immigration—Lectures, assigned reading, and handling of statistics. Historical, sociological, and statistical study of the foreign elements in the population of the United States. Open to students who have had one year's work in the department. [Not given in 1897-98.]

2 hrs., 2d semester. (M. R. SMITH.)

6. Social Pathology.—A study of abnormal conditions and the social causes and effects of vice, crime, and pauperism. Lectures and assigned reading. Open to students who have had one year's work in the department.

2 hrs., 1st semester. (M. R. SMITH.)

7. Charities and Corrections.— Supplementary to course 6, being a study of social therapeutics. Visits are made by the class to the charitable and penal institutions of the State, and a detailed study of an institution is made by each student. Open to students who have had one year's work in the department.

2 hrs., 2d semester. (M. R. SMITH.)

8. Statistics and Sociology.—Vital and social statistics with special reference to method. Lectures, demonstration, and handling of elementary statistics by students. Open to students who have had one year's work in the department.

3 hrs., 2d semester. (M. R. SMITH.)

9. Cities —An examination of the nature and development of the city, and of the industrial and social phenomena peculiar to it. A special study in economics and sociology based on original work from the members of the class.

2 hrs., 2d semester. (Ross.)

10. Social Institutions, I.—The early period. The connection between organic and social evolution ; the causes and conditions of association ; the simplest forms of association and their development into the institutions of primitive society. [Not given in 1898.]

2 hrs., 2d semester. (Powers.)

11. Social Institutions, II. — Domestic and Ecclesiastical Institutions. *a.* The evolution of the family from the primitive to the present form with decrease in its size and complexity ; change in the relative status of its members ; changes in the position of woman ; present problems of marriage and divorce and family functions. (Fall semester.) *b.* The origin of religious rites, ceremonies, and organizations ; the differentiation of ecclesiastical from political and domestic institutions ; the influence of this phase of association upon the evolution of society and the reaction of the latter upon it. (Spring semester.)

2 hrs., both semesters. (Powers.)

12. Social Institutions, III.—Minor social institutions. Dress as a social institution ; its relation to clothing, to sex relations, to industrial, professional, and social standing. Art as a social product and factor in social development. Polite society, its forms and purposes ; the evolution of etiquette and social ceremonial ; the origin and purpose of conventionality. Amusements, their origin, development, and function ; their relation to morality and social progress.

2 hrs., both semesters. (Powers.)

13. Sociology.— Lectures, texts, and papers. Studies forces rather than institutions. The psychology of society is brought out in studies on mob-mind, craze, fad, fashions, conventionality, custom, tradition, invention, rational imitation, discussion, public opinion, ideal, standard, creed, 'ism, etc. Open to graduate and third and fourth year students.

3 hrs., both semesters. (Ross.)

14. Thesis.— [See Economics 14.]

15. Seminary.— [See Economics 15.]

LAW.

Professor ABBOTT, and Instructor POLLEY.

The Department of Law conforms in all respects to the other departments of the University. The requirements for admission are the same; the courses are open for election as major or minor subjects the same as in other departments; the same degree is granted to those who have taken Law as a major subject; in short the work is that of a regular University Department. The full course as finally announced will include the subjects studied in the best professional schools.

The present aims of the department are: (1) To furnish such instruction in the elementary principles of Anglo-American law as may properly form a part of the education of an American citizen; (2) To furnish such instruction in commercial law as may be adapted to the needs of those who intend to become merchants, bankers, brokers, etc., or to follow other lines of business; (3) To begin the study of legal history and legal institutions; (4) To furnish to students intending to adopt law as a profession instruction in some of the courses studied in professional law schools.

Students who enter the department with the intention of taking a degree in Law are recommended to acquire a reading knowledge of Latin, and to prepare themselves for courses 14 and 15 in Latin.

The courses in Law should be taken substantially in the order given, and are to be supplemented by courses in other departments to be selected under the advice of the professors in Law. Students in Law are recommended to make History or Economics their minor courses, especially English and American Constitutional History. Usually the student will not be advised to take any Law during his first year in the University, but rather, to begin with his minor subject, and with such other subjects as will best fit him for assuming the study of law. As a condition to graduation in Law each student will be required to present a thesis of about three thousand words on a subject to be selected under the advice of the major professor.

1. **Elementary Law.**—This course deals with the structural elements of Anglo-American law and is intended to familiarize the student with its fundamental conceptions, principles, classifications, and relations. [Text-book: Robinson's Elementary Law (Student's Series, Little, Brown & Co., Boston, Mass.)]

3 hrs., 1st semester. (POLLEY.)

2. The Study of Cases.—This course is intended to give training in the methods of using legal authorities; to teach students the methods by which lawyers detect *dicta* and determine the pertinence and weight of reported cases. Some attention will be paid to the history of the Reports, early Treatises, and the legal material at present available in the Law Library. [Text-book: Wambaugh's Study of Cases.]

3 hrs., 1st semester. (ABBOTT.)

3. Contracts.—This course includes: (*a*) a study of the elementary principles and conceptions of the law of contracts; (*b*) a study of a considerable number of leading and typical cases from which the student will deduce statements of principles; (*c*) incidentally, instruction and practice in methods of dealing with legal material.

3 hrs., both semesters. (POLLEY.)

4. Torts.—This course deals with the non-contract private law, that is, with the fundamental legal rights, other than those growing out of contract, the various wrongs by which such rights are invaded, together with the methods and limits of redress. Leading and typical cases will be studied in the same way and for the same purpose as in course 2. [Text-books: Pollock on Torts (last English edition); Burdick's Cases on Torts.]

5 hrs., 1st semester. (POLLEY.)

5. Criminal Law.—This course deals with the law of crimes. It will include a study of the history of the criminal law, as well as of specific crimes. [Text-books: Clark's Criminal Law (West Publishing Co., St. Paul, Minn.); Beale's Cases on Criminal Law.]

2 hrs., both semesters. (POLLEY.)

6. Persons and Domestic Relations.—This course includes a study of the legal relations of the family, of marriage and divorce, husband and wife, parent and child, guardian and ward, and such aspects of master and servant as are not treated under agency.

3 hrs., both semesters. (ABBOTT.)

7. Agency.—This course will include a study of the law of Principal and Agent, Brokers, Factors, Attorneys in Law and in Fact.

2 hrs., both semesters.

8. Sales.—This course will include those topics incident to the transfer of personal property by sale; the form of the contract,

especially as affected by the Statute of Frauds; the Contract of Warranty; and the remedies of buyer and seller in case of breach of the contract. [Text-books: Tiffany on Sales; Adams' Cases on Sales.]

2 hrs., both semesters.

9. Negotiable Paper.—This course will deal with the law of Bills, Notes, and Checks. As arranged, it is proposed to make the course of advantage to those intending to engage in business, as well as to those intending to practice law. [Text-books: Ames' Cases on Bills and Notes. Students should provide themselves with some treatise on the subject, for reference.]

3 hrs., both semesters.

10. Property.—This course will include the law of Personal and Real Property, and will require three years to complete the subject. [The text-books will be Gray's Cases on Property and Digby's History of the Law of Real Property; Students are advised to provide themselves with Pollock's Land Laws and Pollock and Maitland's History of English Law.]

a. The first year's course will consist of a study of Vol. I, pp. 1–384, Gray's Cases.

3 hrs., both semesters. (ABBOTT.)

b. The second year's course will consist of a study of Vol. I, pp. 385–791 and Vol. II, Gray's Cases.

5 hrs., both semesters. (ABBOTT.)

11. Anglo-Saxon Laws.

a. Elementary Course. In this course the laws of Ine and Alfred will be read and interpreted. The text recommended is either Schmid, Die Gesetze der Angelsachsen, 2d ed., or Turk's ed. of the Legal Code of Alfred the Great (Boston, Ginn & Co.)

1 hr., both semesters. (FLÜGEL.)

b. Advanced Course. This course is a continuation of course *a*, and will be devoted to an interpretation of the whole body of Anglo-Saxon law. The text used will be Schmid's ed. 'The Essays in Anglo-Saxon Law' (Boston, Little, Brown & Co.) are recommended. [As the laws will be read in Anglo-Saxon, a short grammatical outline of the language will be given, based on Sweet's Anglo-Saxon Primer. A reading knowledge of Latin and German will be very desirable, and for the advanced work necessary.]

1 hr., both semesters. (FLÜGEL.)

12. Moot Court.—The moot courts, of which there are now nine, are limited to nine members each. Four members prepare briefs and argue a case, the remainder of the members sit as judges. Additional courts will be organized when required. Each member will be required to prepare a brief and an opinion, or two briefs or two opinions, each semester for which he registers. Only those students who have had courses 1, 2, 3, and 4, or an equivalent in law, can register for moot-court work.

1 hr., either semester. (POLLEY.)

MATHEMATICS.

Professors ALLARDICE, LITTLE, and GREEN, Instructors COX and BLICHFELDT, and Assistant ARNOLD.

The courses in this Department have been arranged to meet the wants of three classes of students — students whose major subject is Mathematics, students in the departments of Engineering and Physics, and students who, while taking their major in some other department, desire to include some Mathematics in their course.

For students whose major subject is Mathematics the following programme of work is recommended: In the first year, courses 7 and 8; in the second year, courses 9 and 10; in the third year, courses 11 and 12; while the work during the fourth year and for graduate students may be selected from the remaining courses. The advanced courses in the more modern branches of Mathematics will, for the most part, be given once in two or once in three years, and it is hoped that the advanced students will thus have the opportunity of studying the more important branches of modern Mathematics. Courses 1, 2, 3, 4, 5, and 6 have been arranged for students in Engineering and Physics, after consultation with the professors in these departments; courses 1, 2, 3, and 4 forming the work for the first year, and courses 5 and 6 for the second year. Course 13, an elementary course in differential equations, is intended for those Engineering students who desire to include this subject in their course.

Students who desire to take one or more years of Mathematics as part of a liberal training are recommended to begin their work in this department with courses 7 and 8, or with one of them.

1. **Algebra.**—(Two sections.)

2 hrs., both semesters. (BLICHFELDT, ARNOLD.)

2. **Trigonometry.**—(Two sections.)

3 hrs., 1st semester. (BLICHFELDT, ARNOLD.)

3. **Solid Geometry.**—(Two sections.) In this course a few weeks will be devoted to a discussion of some of the more important parts of Plane Geometry.

2 hrs., 1st semester. (BLICHFELDT, ARNOLD.)

4. **Co-ordinate Geometry.**—(Two sections.)

5 hrs., 2d semester. (BLICHFELDT, ARNOLD.)

Courses 1, 2, 3, and 4 constitute the first year's work for students in Engineering.

5. **Calculus.**—(Two sections.)

5 hrs., both semesters. (COX.)

6. **Analytical Mechanics.**

3 hrs., both semesters. (LITTLE.)

Courses 5 and 6 constitute the second year's work for students in Engineering.

7. **Geometry.**—This course will include a discussion of some of the more modern developments of Synthetic Geometry. Open to students who have credit for Plane Geometry as an entrance subject.

2 hrs., both semesters. (ALLARDICE.)

8. **Algebra and Trigonometry.**—In this course Chrystal's *Algebra* will be used as a text-book, but the subject will be presented in as elementary a form as possible. Open to students who have credit in Elementary Algebra as an entrance subject.

3 hrs., both semesters. (GREEN.)

Courses 7 and 8 may be taken as the first year's work by students making Mathematics their major subject. These courses are also recommended to students whose major subject lies in some other department, but who may desire to include some Mathematics in their course.

9. **Advanced Algebra.**—Chrystal's *Algebra* is used in this class; and the course forms a continuation of course 8.

2 hrs., both semesters. (GREEN.)

10. Co-ordinate Geometry.— Charles Smith's *Conic Sections* will be used as a text-book.

3 hrs., both semesters. (COX.)

Courses 9 and 10 form the regular work, during the second year, for students whose major subject is mathematics.

11. Differential and Integral Calculus.— Lectures on the Differential and Integral Calculus, with applications to the theory of plane curves, on the lines of Williamson's treatises.

3 hrs., both semesters. (ALLARDICE.)

12. Statics.— Minchin's Statics will be used as a text-book.

2 hrs., both semesters. (LITTLE.)

Student's are recommended to take courses 11 and 12 during their third year.

13. Differential Equations.— (Short course.) This course is intended primarily for students in Physics and Engineering.

3 hrs., 1st semester. (LITTLE.)

14. Differential Equations. — Forsyth's *Differential Equations* will be used as a text-book.

3 hrs., both semesters. (LITTLE.)

15. Determinants and the Theory of Equations.—Burnside and Panton's *Theory of Equations* will be used as a text-book.

2 hrs., both semesters. (GREEN.)

16. Modern Analytical Geometry.—A lecture course on the lines of Clesbch's *Vorlesungen über Geometrie.*

3 hrs., both semesters. (GREEN.)

17. Theory of Functions.—An elementary lecture-course.

2 hrs., both semesters. (ALLARDICE.)

18. Geometry of Three Dimensions.— Salmon's *Geometry of Three Dimensions* will be used as a text-book.

3 hrs., both semesters. (ALLARDICE.)

19. Co-ordinate Geometry.— Salmon's *Conic Sections* is used as a text-book.

2 hrs., both semesters.

20. Projective Geometry.—Lectures following Reye's *Geometric der Lage.*

2 hrs., 1st semester.

21. Higher Plane Curves. *2 hrs., both semesters.*

22. Curve-tracing.—Frost's *Curve-tracing* is used in this course.

2 hrs., both semesters.

23. Vector Analysis. *2 hrs., both semesters.*

24. Theory of Substitutions. *2 hrs., 2d semester.*

25. Theory of Functions. *3 hrs., both semesters.*

[Courses 19 to 25 inclusive will not be given in 1897–98.]

PHYSICS.

Professor SANFORD, and Assistant Professors TAYLOR, STEARNS, and MURPHY.

I. LABORATORY COURSES.

1. Dynamics.—Open only to students who have had elementary algebra and plane geometry. To precede all other courses offered in Physics.

3 hrs., either semester. (STEARNS, MURPHY.)

2. Electricity and Magnetism.

3 hrs., either semester. (STEARNS, MURPHY.)

3. Heat and Sound.

2 hrs., 2d semester. (MURPHY.)

4. Elementary Optics.—Open only to students who have had Trigonometry. Only a small class can be accommodated, and the preference will be given to students who need this training for their major subject.

2 hrs., 2d semester. (SANFORD.)

5. Experimental Optics.—For major students in Physics. A few others will be admitted by special arrangement.

2 hrs., both semesters. (SANFORD.)

6. Electrical and Magnetic Measurements—To be accompanied by lecture course *a*. Open to students who have had courses 1 and 2, or their equivalent, and may be made a two years' course.

3 hrs., both semesters. (TAYLOR.)

7. Electro-Chemical Measurements.—To be accompanied by lecture course *a*. Open to students who have had courses 1 and 2, or their equivalent.

3 hrs., both semesters. (TAYLOR.)

8. Investigation of Original Problems in the Laboratory.

Hours to be determined in each case. (SANFORD.)

II. LECTURE COURSES.

a. Electrical and Magnetic Measurements.—To accompany laboratory courses 6 and 7.

1 hr., both semesters. (TAYLOR.)

b. General Physics.—For students who have had ten hours of laboratory Physics.

3 hrs., both semesters. (SANFORD.)

c. Theoretical Optics.—[Course *c* will probably not be given in 1897–98.]

2 hrs., 1st semester. (MURPHY.)

d. Methods of Mathematical Physics and Chemistry.—Open only to students who have had or are taking Calculus.

2 hrs., both semesters. (MURPHY.)

e. Thermodynamics.

2 hrs., 2d semester. (STEARNS.)

Laboratory Fees.—For Laboratory courses 6 and 7 a uniform fee of three dollars a semester will be charged. In other laboratory courses, except 8, the fee will be two or three dollars per semester, according to the number of hours credit in the course. In course 8, the fee will depend upon the number of hours credit and the apparatus used, but will not exceed five dollars per semester.

CHEMISTRY.

Professors STILLMAN, RICHARDSON, and LENOX, Assistant Professor YOUNG, and Assistants ADAMS and DURRELL.

I. LECTURE COURSES.

1. Elementary Inorganic Chemistry. — Explaining and reviewing laboratory course *a*, and open, in connection with that course, to all students in the University.

2 hrs., either semester. (RICHARDSON.)

2. Advanced Inorganic Chemistry.—Experimental lectures on General Inorganic Chemistry, based on the periodic system. Open to all students who have completed courses 1 and *a*, or an equivalent.

2 hrs., both semesters. (STILLMAN.)

3. Organic Chemistry.—Experimental lectures and reviews on the Chemistry of Carbon Compounds. Open to students who have completed course 2.

2 hrs., both semesters. (RICHARDSON.)

4. Industrial Chemistry.—Lectures on the processes of chemical arts and industries—fuels, acid and alkali manufacturing, glass, explosives, sugar-making and refining, petroleum, etc. Lectures in this course are also given by Professors RICHARDSON (Dyes), LENOX (Iron and Steel), and YOUNG (Pottery). Open to students who have completed courses 1 and 2 and laboratory course *b;* may be taken concurrently with course 3.

2 hrs., both semesters. (STILLMAN.)

5. History of Chemistry.—Open to students who have completed courses 2 and 3. [This course will be given in 1897–98.]

1 hr., 2d semester, in alternate years. (RICHARDSON.)

6. Theories of Chemistry.—Modern concepts in Chemical Theory. Open to students who have completed courses 2 and 3; may advantageously follow course 5.

2 hrs., 1st semester. (STILLMAN.)

7. Urine Analysis.—In connection with laboratory course *f*. Open to students who have completed at least one semester's work in Quantitative Analysis. [This course will be given in 1897–98.]

2 hrs., 1st semester, in alternate years. (LENOX.)

8. Advanced Organic Chemistry.—Advanced topics in Organic Chemistry, including Stereo-Chemistry. Open to students who have completed course 3. [This course will not be given in 1897–98.]

1 hr., both semesters, in alternate years. (YOUNG.)

9. Toxicology.—In connection with laboratory course *g*. Experimental lectures on the detection of the more important

organic and inorganic poisons. Open to those who have completed at least one semester's work in Quantitative Analysis. [This course will not be given in 1897–98.]

2 hrs., 1st semester, in alternate years. (LENOX.)

10. **Organic Synthesis.**—Treating of the more important general reactions for the transformation of carbon compounds. Open to students who have completed courses 3 and *c*. [This course will not be given in 1897–98.]

1 hr., 2d semester, in alternate years. (RICHARDSON.)

11. **Elementary Chemistry.** — This course consists of lectures with experimental illustration and with occasional recitations. It is intended for such students as have not time to take the fuller experimental courses 1 and *a*. Students who have received credit in courses 1 and *a*, or entrance credit in Chemistry, will not receive credit for this course. Students having received credit in course 11, and taking 1 and *a* subsequently, will receive credit only for the one additional hour.

2 hrs , both semesters. (YOUNG.)

12. **Seminary in Chemistry.**—Discussion of assigned topics in theoretical and general Chemistry. Open to graduate students, and to advanced undergraduates in Chemistry, with the approval of the faculty in Chemistry.

1 hr., both semesters.

13. **Qualitative Analysis.** — In connection with laboratory course *b*.

1 hr., either semester. (LENOX.)

14. **Electro-Chemistry.** — Lectures on the generation of electricity by chemical processes, the theory of batteries, etc. Open to students who have completed Chemistry 2 and who have completed or are pursuing either course 5 or course 11 in mathematics. [This course will be given in 1897-98.]

1 hr., both semesters, in alternate years. (YOUNG.)

II. LABORATORY COURSES.

a. Elementary Inorganic Chemistry. — Experiments in Elementary Inorganic Chemistry in connection with course 1.

3 afternoons, either semester. (RICHARDSON, YOUNG.)

b. Qualitative Analysis. — Open to students who have completed course *a*.

3 afternoons, either semester. (LENOX.)

c. Preparation of Typical Carbon Compounds.—Open in connection with course 3 to students who have completed course *b*.

3 afternoons, either semester. (RICHARDSON.)

d. Quantitative Analysis. — Training in manipulation in gravimetric and volumetric methods and mineral analysis. Work begins either semester. Students in other departments than in Chemistry may register for three afternoons if they cannot arrange for four, as is recommended. Open to students who have completed courses 2 and *b*.

4 afternoons, both semesters. (STILLMAN, LENOX.)

e. Advanced Laboratory Work.—Considerable option will be permitted during this year as to special lines of work to be pursued. Problems in Inorganic Chemistry, Organic Chemistry, Analytical Chemistry, Industrial Chemistry, Physical Chemistry, are among the special branches from which the advanced student may choose. Open to students who have completed course *d*.

4 afternoons, both semesters.

(STILLMAN, RICHARDSON, LENOX, YOUNG.)

f. Urine Analysis.—Open to students who are taking or have completed course 7. [This course will be given in 1897-98.]

3 afternoons, 1st semester, in alternate years. (LENOX.)

g. Toxicology.—Open to students who are taking or have completed course 9. [This course will not be given in 1897-98.]

4 afternoons, 1st semester, in alternate years. (LENOX.)

h. Inorganic Preparations. — A laboratory course in the preparation and purification of Inorganic Compounds. Open to students who have completed courses 2 and *b*.

3 afternoons, either semester. (YOUNG.)

Candidates for the degree of A. B. in Chemistry will be required to complete courses 1, 2, 3, 13, *a*, *b*, *c*, and *d* in Chemistry, course 1 in Physics, courses 1 and 2 in German. Students who are candidates for A. B. in Chemistry, but are looking forward to Medicine or Pharmacy as a career, are permitted to substitute Physiology 1 for Physics 1 when it is not practicable for them to take both.

III. CHEMICAL ENGINEERING.

In recognition of an increasing field of activity for men qualified to occupy positions as superintendents and managers of manufacturing enterprises involving chemical processes, it has been decided, in co operation with the departments of Civil Engineering and Mechanical Engineering, to offer to students the opportunity to obtain such training as will best qualify them for such positions. Experience shows the great advantage in these positions of fundamental training in principles of construction, strength of materials, steam engineering, machine designing, combined with thorough chemical training.

The degree of Engineer in Chemical Engineering will be conferred upon the completion of the following courses: Chemistry, 1, *a*, 2, 3, 4, 13, *b*, *c*, *d*, *e*; German, 1, 2; Physics, 1, 2; Mathematics, 1, 3; Civil Engineering, 1 *a* and *b*; Mathematics, 2, 4, Mechanical Engineering, 2, 3, 4, *a* and *b*; Mathematics, 5 and 6; Civil Engineering, 2; Mechanical Engineering, 7; Mechanical Engineering, 5; Steam-Engineering Laboratory, 8; Thesis work.

It is estimated that students entering the University with that intention will be able to take the degree in one year after the baccalaureate degree. Students pursuing this course will be given the degree of A. B. in Chemistry at the end of four years.

Laboratory Fees.—A charge of *twenty dollars* per semester will be made to students in all laboratory courses. Students registering for more than four hours per week will be charged *twenty-five dollars* per semester. Of these charges five dollars per semester is returnable, less bills for breakage or loss of apparatus.

BOTANY.

GENERAL BOTANY.

Professor CAMPBELL, and Instructor SHAW.

1. Elementary Botany.—Study of representatives of the principal groups of plants, with lectures upon special morphology and classification. (Campbell's Elements of Structural and Systematic Botany.) The aim of this course is to give the student a grounding in the principles of plant structure and classification, derived from a careful study in the laboratory of selected types,

supplemented by such explanatory lectures as may be deemed necessary.

3 hrs., both semesters. (CAMPBELL, SHAW.)

2. **Algæ.**—Lectures, reading, and laboratory work upon the special morphology and classification of the Algæ.

3 hrs., 1st semester. (CAMPBELL.)

3. **Archegoniatæ.**—Special morphology and classification of the Archegoniatæ. Continuation of course 2.

5 hrs., 2d semester. (CAMPBELL.)

4. **Histological Methods.**—Application of microtome sectioning to the study of morphology and development.

2 hrs., both semesters. (CAMPBELL, SHAW.)

5. **Experimental Physiology.**—Laboratory work with lectures and reading.

3 hrs., 2d semester. (SHAW.)

6. **The Evolution of Plant Forms.**—Open to all except first year students.

1 hr., 2d semester. (CAMPBELL.)

7. **Advanced Work.**—Intended especially for graduate students.

Course 1 must precede all other courses, except course 6, and students making the subject a major must complete courses 1 to 5 inclusive, and also courses 2 and 3 in Systematic Botany, before graduation. Course 7 is intended especially for graduate students, and opportunities will be given such students for carrying on special lines of work upon original problems.

Laboratory Fees.—Three dollars per semester for each course.

SYSTEMATIC BOTANY.

Professor DUDLEY.

Instruction in this Department chiefly relates to the Spermaphytes, their structure, affinities, and geographic distribution. The advanced work on the Fungi will also be given under its direction.

Course 1 or its equivalent is required of students intending to graduate with Systematic Botany as a major study. It is also required as a basis for courses 2, 4, 5, and 6. An elementary knowledge of the structure of the flowering plants only is required to enter course 3.

1. Elementary Botany.— A study of plant types, etc. [See course 1 under General Botany.]

3 hrs., both semesters. (CAMPBELL, SHAW.)

2. The Fungi.— The laboratory work (three hours) will be devoted to morphology, development, and culture methods; the lectures to systematic relationships, with an account of economically important forms.

5 hrs., 1st semester. (DUDLEY.)

3. Spermaphyta.— The morphology, histology, and affinities of the principal orders of flowering plants represented on the Pacific Slope will be studied, and an acquaintance made with as many forms as possible through field and laboratory work.

4 hrs., 2d semester. (DUDLEY.)

[**4. The Algæ and Archegoniatæ.**— See courses 2 and 3 under General Botany.]

5. Forest Trees and Geographical Distribution.—Lectures on the tree, on the orders containing woody plants, and on the general principles of geographical distribution. Laboratory work in identifying and preparing herbarium specimens of woody plants, native and exotic.

2 hrs., 2d semester. (DUDLEY.)

6. Advanced Work.—Advanced work and special investigation on the biology of the Spermaphytes and Fungi, including systematic studies, and the natural methods of cross-fertilization.

3 or more hrs., per semester. (DUDLEY.)

Laboratory Fees.— Three dollars per semester for courses 2, 3, and 6.

ENTOMOLOGY.

Professors COMSTOCK and KELLOGG.

The instruction in this Department is given by means of lectures, laboratory practice, and field work. In the lectures the more general questions are discussed, with the view of giving the students as broad a knowledge of the subject as is practicable in the time devoted to it. In the laboratory work special attention is paid to the methods of investigation and to training in accurate observation.

1. **General Lecture Course.** — Lectures treating of the zoological position of insects; the habits of insects, with special reference to those species that are of economic importance; and the practical application of Entomology, including discussions of insecticides and of the various methods of controlling the ravages of insects injurious to agriculture. (Lectures, January to March.) Two hours' credit will be given on completion of the lectures. Students may extend the course to the end of the semester by laboratory work in collecting and preserving insects, and in practice in the determination of families. An additional hour of credit will be given for this work.

2 or 3 hrs, 2d semester. (COMSTOCK.)

2. **Introductory Laboratory Course.**— Laboratory and field work, and occasional lectures. The course includes the elementary study of insect morphology and physiology, the determination of genera and species, and practice in collecting and preserving specimens.

3 hrs., both semesters. (KELLOGG.)

3. **Advanced Laboratory Course.**—Special work in morphology, or classification, or in the life-history of insects. Open to students who have completed course 2.

2 to 5 hrs., both semesters. (KELLOGG).

4. **Comparative Morphology, and Taxonomy.**—One lecture a week on studies in comparative insect morphology and on their application to insect taxonomy. Open to students who have had some training in biology.

1 hr., 2d semester. (KELLOGG.)

5. **Natural History of Insects.** — An introduction to the study of natural history, based on observation of the structure and life-history of insects. This is intended especially for those who expect to teach Entomology or general natural history in elementary schools. One lecture and two laboratory or field exercises weekly.

3 hrs., 1st semester. (KELLOGG.)

6. **Morphology and Classification of the Coccidæ** (Scale insects).—Laboratory and field work. Open only to students who have completed course 2.

3 hrs., January–March. (COMSTOCK.)

Students making Entomology a major must complete courses 1 to 4 and course 6, and must have an elementary knowledge of botany and general zoology before graduation

Special investigations in insect morphology or physiology, or in taxonomic work, will be arranged for graduate students.

Laboratory Fees.—Three dollars per semester for each laboratory course.

THE ENTOMOLOGICAL COLLECTIONS.

The Entomological cabinets contain specimens of the more common species of the United States. These have been determined by specialists of the various orders, and are accessible for comparison. The collection includes many sets of specimens illustrative of the metamorphoses and habits of insects.

HORTICULTURE.

[The courses in Horticulture, given by Assistant Professor EMORY E. SMITH, have been temporarily suspended.]

HYGIENE AND ORGANIC TRAINING.

Professor WOOD, and Assistants MARCH, STOREY, BOLTON, EDWARDS, STEBBINS, HULL, and HILL.

The aims of this Department are: (1) To provide general and special instruction in matters pertaining to the improvement and preservation of health; (2) To help the student, through individual advice and assistance, toward personal improvement and restoration of health; (3) To furnish the student, through facilities and instruction in the Gymnasium and elsewhere, opportunity for general organic development; (4) To provide a thorough training for those who wish to prepare themselves for teaching in this branch of education.

For the gymnastic training of students there are two buildings, Roble Gymnasium for the young women, and Encina Gymnasium for the young men. Both are temporary frame buildings, but are substantially built and equipped with suitable apparatus.

Excellent facilities for athletics have been provided. The young women have two tennis courts, paved with bituminous rock; the young men have four courts of the same material. In addition, the athletic grounds contain a quarter mile track, and areas for basket-ball, base-ball, foot-ball, and field sports. A small lake near the University buildings furnishes opportunity for rowing in small boats. The work in "physical training" is under the supervision of the medical director, who is the professor of hygiene and organic training.

All students are entitled to anthropometric and medical examination. The information furnished by measurement and examination gives the medical director the basis for advice to the student as to the hygienic regimen most conducive to health and development. Exercises are prescribed for the individual, first for the correction of special weakness and then for rational and symmetrical development. The regular gymnastic work is under the constant supervision of the instructors.

The medical director is in his office an hour, daily, for consultation.

1. Gymnastic Exercises.—Individual and class work, with and without apparatus. Open to all students, under the advice of the medical director. One hour of credit will be given for systematic prescribed exercise, the three exercises a week to be taken on separate days arranged according to the work of the student. (Three exercise hours a week.)

1 hr., both semesters. (Wood, March, Storey, Stebbins, Bolton, Edwards, Hill.)

2. Personal Hygiene.—Open to all students. Course 2 is designed to give the student practical knowledge upon matters pertaining to the individual care of the body, preservation and improvement of health, prevention of disease, and treatment in emergencies or "First Aid to the Injured."

2 hrs., either semester. (Wood, March.)

3. Sanitary Science.—Open to students who have completed course 2. Course 3 will take up the study of public health, general hygiene, and sanitary science. Students will prepare papers upon assigned topics.

2 hrs., 2d semester. (Wood.)

4. School Hygiene.—Open to those who are preparing to teach. A study of the child organism, special hygiene of childhood

and adolescence, physiology and hygiene of the nervous system, health condition of schools and hygiene of instruction, diseases caused or favored by school life and their prevention.

2 hrs., 1st semester. (WOOD.)

5. Nursing.—Open by special permission to those who have had satisfactory preliminary training. This course is intended not for the training of professional nurses, but to give the student useful knowledge and practical training in matters pertaining to the care of the sick, treatment of injuries, what to do in emergencies, hygiene of the sick room, and similar topics.

2 hrs., 2d semester. (WOOD.

6. Hygiene of Sex.—Open to advanced students by special permission.

1 hr., both semesters. (WOOD.)

The following courses, in addition to courses 2, 3, and 4, are designed for candidates for the degree of A. B. in Hygiene and Organic Training, and for special students in this department.

[**7. General Anatomy and Physiology.**—See course 1 in Physiology.]

[**8. Animal Physiology.**— See course 2 in Physiology.]

[**9. Organic Life.**— See course 5 in Bionomics.]

10. Applied Anatomy and Physiology.—Course 10 takes up the study of human anatomy and physiology from the standpoint of hygiene and organic training.

2 hrs., both semesters. (WOOD.)

11. Kinesiology, and History of Gymnastics. — Special physiology of exercise, bodily mechanics, history of "Physical Education," and study of the various "Systems of Physical Training." [Course 11 will be given again 1898-99.]

2 hrs., 1st semester. (WOOD.)

12. Special Gymnastic Training.— Includes individual and class exercises; use of gymnastic apparatus; calisthenics; light and heavy gymnastics, health and medical gymnastics, with and without apparatus. Gymnastic games. (Five exercise hours a week.)

2 hrs., both semesters. (WOOD, MARCH, STOREY, EDWARDS, BOLTON, STEBBINS, HILL.)

13. Anthropometry.— Instruction in methods of examining, measuring and testing the body, tabulation and charting of statistics. (One lecture and three laboratory hours a week.) [Course 13 will be given again 1898–99.]

2 hrs., 2d semester. (WOOD, MARCH.)

14. Special Courses.— Special courses of study are laid out for advanced students according to the qualifications of each individual. Such courses include special investigations in anthropometry, diagnosis, special tests and specific effects of various kinds of activity upon the different structures and functions of the human organism.

PHYSIOLOGY AND HISTOLOGY.

Professor JENKINS, Assistant Professor MCFARLAND, and Assistants WILBUR and STOLTENBERG.

UNDERGRADUATE COURSES.

1. General Anatomy and Physiology.— This course is designed to give a general view of the laws of the structure and the activites of organisms. The work will give occasion to discuss many questions of General Biology. It consists of: First, the study of the cell and its activities as shown in the unicellular organisms, in reproductive cells, and in individual cells of many tissues; second, the study of the laws and course of development, resulting in higher differentiations in structure, and specializations in function exhibited in a selected series of organisms, both animals and plants, of increasing complexity; third, the comparative study of the physiological processes of forms placed under widely different conditions. The latter part of the course is occupied with an introduction to the embryology, anatomy, and physiology of vertebrates. (One lecture and five laboratory hours a week.)

3 hrs., both semesters. (JENKINS, WILBUR, STOLTENBERG.)

2. Animal Physiology.— This course is to be preceded by course 1. It includes an experimental course in physiology in the subjects: Muscle, nerve, blood, circulation, digestion, respiration, elimination of wastes, metabolism, nutrition. The work is based

on Foster's Physiology, Parts I and II, as the text. (One lecture and five laboratory hours a week.)

3 hrs., both semesters. (JENKINS, WILBUR.)

3. Structure and Functions of the Nervous System and the Sense Organs.—This course comprises a comparative study of a series of vertebrate brains, including the human brain, the development of the vertebrate nervous system and sense organs, the histology of these organs, and an experimental course in the physiology of the nervous system and sense organs based on Foster's Physiology, Parts III and IV. For texts in structure the student is referred to Quain's Anatomy, 10th ed., and Edinger. It is desirable that students in this course should have had at least the biological training represented by course one. (One lecture and five laboratory hours a week.)

3 hrs., both semesters. (JENKINS, STOLTENBERG.)

4. Blood and Circulation.—Advanced course open only to those who have completed courses 1, 2, and 6.

3 hrs., 1st semester. (JENKINS, WILBUR.)

5. Special Courses in Physiology.—These courses are open to those who have taken courses 1, 2, and 6. They are arranged for the advanced study of special subjects or as drill in the methods of research. The work will be arranged for each individual student. The time of each will vary with the exigencies of the case.

2 to 5 hrs., both semesters. (JENKINS, WILBUR.)

6. Histology.—This course includes both the study of the tissues in a comparative way, and the history of their development. Open to those who have taken course 1, or its equivalent. Students with Physiology as their major are advised to take courses 2 and 6 together. (One lecture and five laboratory hours a week.)

3 hrs., both semesters. (MCFARLAND.)

7. Special Courses in Histology.—These courses are open to those who have taken courses 1 and 6. Under this head a special course in Histology of the Nervous System, Histogenesis, Ovo- and Spermatogenesis, or in Cell Morphology, will be planned for each individual student, with the end in view of giving opportunity for a more extended study of some phase of one of these subjects, and a careful drill in the technique of the subject

and methods of research. The time for each course will be fixed to accord with the nature of the work.

2 to 5 hrs., both semesters. (McFARLAND.)

8. **The Cellular Phenomena of Reproduction.**—A course in the cytology of the reproductive processess in unicellular and multicellular organisms, and the theories connected therewith. (Two lectures per week with demonstrations and laboratory work.)

2 hrs., 2d semester. (McFARLAND.)

9. **Mamalian Anatomy.**—Lectures and dissections.

2 to 5 hrs., 2d semester. (McFARLAND.)

10. **Teachers' Course in General Physiology.**—This course is arranged to give a practical illustration of the methods of the study and teaching of Physiology in the elementary schools. Students who expect to teach are received into this course on the recommendation of the Department of Education. (One lecture and five laboratory hours a week.)

3 hrs., 1st semester. (JENKINS.)

11. **Journal Club.**—Students in the advanced classes will be expected to meet once a week to discuss current literature in Physiology and Histology.

1 hr., both semesters.

12. **Seminary in Physiology and Histology.**—Open to graduate students.

2 hrs., both semesters. (JENKINS, McFARLAND.)

Candidates for the Bachelor's degree who select Physiology and Histology as a major will be expected to take courses 1, 2, 3, 6, and 11, and at least five hours to be made up from courses 5, 7, 8, and 9; and in addition, courses 1 and *a* in Chemistry, or courses 1 and 2 in Physics, and the first semester of Vertebrate Embryology (course 4 in Zoology.)

Laboratory Fees.—Seven dollars per semester, except for course 1, in which the fee is five dollars per semester.

GRADUATE COURSES.

The graduate courses in Physiology and Histology will be planned in the case of each individual student. They will include the thorough study of some of the more recent special treatises

of various subjects in Histology and Physiology, and a repetition of a sufficient number of experimental investigations to give a discipline in the methods of investigation. There will be given at different times a series of advanced lectures on Physiological and Histological subjects. The graduate students will meet weekly to discuss the journals of the Department, and will participate in the work of the Seminary in Physiology and Histology. Candidates for the Doctor's degree will occupy a considerable portion of their course on some original research, the subject of which is determined by their previous training and their inclinations. The collateral subjects to be pursued with the major will be chosen for each candidate with reference to his particular needs.

PREPARATORY MEDICAL COURSE.

Students intending to enter on the study of medicine, are advised to take Physiology and Histology as a major subject, with Chemistry, Physics, Comparative Anatomy of the Vertebrates, and Hygiene among the collateral subjects. Such a course gives that foundation both in scientific knowledge and in skill in experimental Physiology, and in Histological and Anatomical technique, which will make it possible to accomplish the medical course of the best medical schools in a shorter time and with much greater advantage.

ZOOLOGY.

Professor GILBERT, Assistant Professor PRICE, and Assistant SNYDER.

1. General Zoology.— A laboratory course, involving the study of representatives of the principal groups of animals, together with lectures on their structure and classification, and on the general laws of biology which they illustrate.

3 hrs., both semesters. (PRICE.)

2. The Vertebrates.— A general course in the classification of vertebrate animals, with studies in the habits and the geographical distribution of species. The course will include field excursions and a study of the methods of collecting and preserving specimens.

2 hrs., both semesters. (GILBERT.)

3. Comparative Anatomy of the Vertebrates.— A more detailed examination of vertebrate morphology, including dissection of representatives of the several classes of vertebrates, with comparative studies in vertebrate osteology, the nervous and circulatory systems, etc.

3 hrs., both semesters. (GILBERT.)

4. Vertebrate Embryology.— During the first semester, the development of the chick; for the second semester, the shark, salamander, and mammal.

2 hrs., both semesters. (PRICE.)

5. Advanced Embryology. — The work during the first semester will consist of a detailed study of the development of the nervous system, the urinogenital, or some other important system of organs. During the second semester, each student will be given some special problem, usually in the line of the verification of some piece of original work.

2 hrs., both semesters. (PRICE.)

6. Ichthyology.— A course of lectures and laboratory work, including an examination of the larger groups of fishes, with special reference to the characters on which they are based, and including practical work in the discrimination of species.

2 hrs., both semesters. (GILBERT.)

7. Advanced Ichthyology.— Special problems in the morphology and classification of fishes will be set for advanced students prepared for such work.

3 hrs., both semesters. (GILBERT.)

8. Course in Zoological Reading.

1 hr., both semesters. (GILBERT.)

The *Zoological Club* meets bi-weekly to discuss and record the original observations of its members. Field excursions are frequently taken, and a zoological exploration of the vicinity of Palo Alto is in progress.

Course 1 or its equivalent must precede all others, and courses 1 to 8 or their equivalents will be completed before graduation by all regular students making Zoology their major study.

Work for graduate and special students will be laid out in accordance with their individual needs and preferences.

Laboratory Fees.— Five dollars per semester.

THE ZOOLOGICAL MUSEUM.

The Zoological Museum contains a very full representation of the fishes of North America, consisting of about 10,000 alcoholic specimens, representing about 2,500 species. These include among others a valuable series of the deep-water fishes of the Pacific and large collections from the West Indies, the Hawaiian Islands, Bering Sea, Japan, and the coasts of Mexico and Central America. Large additions have been recently made to the collections of reptiles, birds, and mammals, special attention being given to the fauna of California and adjoining States. The development of the Museum has been due very largely to the coöperation of Mr. Timothy Hopkins.

Material illustrating the principal groups of invertebrates is ample for class instruction.

GEOLOGY.

Professors BRANNER and J. P. SMITH.

1. Dynamic and Structural Geology. — Lectures with syllabus.

3 hrs., 1st semester. (BRANNER.)

2. Economic Geology.—Lectures, with visits to mines. Open to students who have completed course 1.

2 hrs., 2d semester. (BRANNER.)

3. Topographic Geology.—Field and laboratory work, with the construction of geologic maps, models, and sections. Open to students who have completed course 1 in Geology, and course 4 in Civil Engineering.

2 to 5 hrs., both semesters. (BRANNER.)

4. Special Courses. — Special courses of instruction and training are laid out for advanced and special students according to the needs and qualifications of each individual. Special investigations are taken up by advanced students as rapidly as it is possible for them to undertake such work advantageously.

1 to 5 hrs., both semesters. (BRANNER.)

5. Mineralogy.—*a.* Blowpipe analysis (first semester). *b.* Elementary Crystallography and Physical Mineralogy (second semester). Open to students who have had course 1 in Geology and Elementary Chemistry.

2 hrs., both semesters. (J. P. SMITH.)

6. Advanced Mineralogy and Petrography.—*a.* Mathematical, Physical, and Chemical Crystallography (first semester). *b.* Descriptive Mineralogy and Petrography, with special studies of the rock-forming minerals (second semester). Open to advanced students and graduates.

4 hrs., both semesters. (J. P. SMITH.)

7. Paleontology.—*a.* Systematic Paleontology, or the history and character of organisms (first semester). *b.* Historical Geology, or the history and character of formations (second semester). Open to students who have completed course 1.

4 hrs., both semesters. (J. P. SMITH.)

8. Paleontology.—Original investigation of various problems in paleontology, especially of the distribution of faunas. This course will consist entirely of private work, in field and laboratory. Open to advanced students and graduates.

2 to 5 hrs., both semesters. (J. P. SMITH.)

9. Assaying. — Course 9 assumes courses 1, *a*, and *b* in Chemistry, and courses 1 and 2 in Geology.

2 hrs., 1st semester. (LENOX.)

Laboratory Fees.—Five dollars for the first semester in course 5; twenty dollars in course 9.

MUSIC.

The University has not yet established a Department of Music. In 1896–97 matriculated students were allowed University credit for the satisfactory completion of a course in Harmony given by Mr. H. B. Pasmore of San Francisco, the expense of which was met by the students taking the course. A similar arrangement will probably be made in 1897–98, providing courses in Harmony and Counterpoint, and in Canon and Fugue and Instrumentation, if a sufficient number of students desire to take them. The University Library has received by gift of the Stanford Choral Society a library containing, besides a sufficient number of the vocal scores and vocal parts of the chief choral works of the great masters for the use of a large chorus, the full orchestral scores of the same works, affording accordingly an opportunity for the thorough study of Instrumentation.

DRAWING AND PAINTING.

Professor BROWN, and Associate Professor CLARK.

The aim of the Department is to give power to observe, skill to record, and intellectual and esthetic sensibility to understand and feel. It is not intended to emphasize any particular technical style; the only technical requirements pertain to those principles of workmanship common to all good work. Scientific students can easily work into scientific drawing, and such help as is practicable in this line is given.

It is believed that the natural order of teaching is—practice first, theory afterwards; wholes first, parts afterwards; effort first, regulation afterwards. Too close preliminary attention to ultimate aims and theoretically correct methods tends to confuse the student and prevent his going anywhere or doing anything. Consequently, the student does not begin with the straight line, circle, square, and ellipse; with their bisections, right angles, foci, axes, etc. The student first makes, at natural speed, the best drawing he can of any convenient object. Large numbers of drawings follow, and progress comes by doing a little better each time. The result is readiness, adaptability, and freedom. A thorough course of theoretical scientific perspective is given, independently of the other drawing, in the second semester of the first year. In the second year color and life work are taken up; and it is expected that the facilities and instruction in these lines will be extended in 1897-98.

1. Elementary.—See *a* and *b* of course 2. Open to all students but arranged especially for students in Engineering.

2 hrs., 1st semester. (CLARK.)

2. Elementary Drawing, Light and Shade, Still-Life, and Landscape.—*a.* Leaves and trees in flat tints with a linear study of their artistic and geometrical composition. *b.* Perspective principles involved in drawing objects of geometrical structure. *c.* Drawing still-life material in light and shade, in pencil, pen and ink, or wash; with especial attention to the interpretation of local color values. *d.* Study of the use of line in form, texture and surface interpretation. *e.* Landscape in various materials.

The course is designed to give scientific, pedagogical, and other students as much power in drawing as one year's study can give. It is also intended as a preparation for further work in this department. Alertness in observation and versatility in

expression are deemed more important than elaborate finish. No one student can cover the whole course with all materials, so each may spend his time with the subjects and materials which seem best, and those who wish may make it a two years' course. Open to all students.

3 hrs., both semesters. (CLARK.)

3. **Drawing and Painting.**—Open to those who have had course 2 or its equivalent.

4 hrs., both semesters. (BROWN.)

4. **Scientific Perspective.**—*a.* Theory of perspective and applications to assumed problems, with instruments. *b.* Principles of perspective in actual problems, from nature. *c.* Perspective criticism and study of drawings and photographs. Open to students who have had or who are taking course 1 or course 2.

2 hrs., 2d semester. (CLARK.)

5. **Clay Modeling.** — Open to those who have had course 2 or its equivalent.

3 hrs., 1st semester. (BROWN.)

6. **Life Class.**—This course is intended for advanced students.

5 hrs., both semesters.

CIVIL ENGINEERING.

Professors C. D. MARX, WING, and HOSKINS, and Assistant Professor FISH.

I. GENERAL WORK.

Linear Drawing and Descriptive Geometry.

1a. Linear Drawing and Lettering.—(Six hours a week, first half of first semester.) Course 1*a* is open to all students, and is required of students in Engineering.

1 hr., 1st semester. (FISH.)

1b. Descriptive Geometry.—Including shades, shadows, and perspective. (Lectures and recitations, two hours a week, drafting, six hours; second half of first semester, and second semester.) Course 1*b* is open to students who have completed

solid geometry and 1*a*, and is required of students in Engineering.

2 hrs., 1st semester; 4 hrs., 2d semester. (FISH.)

Applied Mechanics.

2. Applied Mechanics.

a. Graphic Statics.—This course begins with a discussion of the general theory of complanar forces applied to a rigid body. The principles relating to the composition, resolution, and equilibrium of forces are deduced graphically, and graphic methods are given for the solution of statical problems. Then follow applications to the determination of stresses in simple framed structures, including trusses sustaining both fixed and moving loads. The determination of centroids and moments of inertia of plane areas is then taken up, but this subject is treated only so far as it has useful applications in the solution of problems in the design of structures. (Lectures and recitations three hours a week, drafting six hours; first ten weeks of first semester.)

b. Mechanics of Materials.—Under this head are treated the strength and elastic properties of the ordinary materials of engineering. The main subjects covered are simple tension, compression, and shear; theory of flexure, with applications to simple and continuous beams; theory of long columns; torsion and shafts; repeated stress; sudden stress and resilience. (Lectures and recitations five hours a week for twelve weeks, following course 2*a*.)

c. Hydrostatics and Hydraulics.—This course treats of fluid pressure, the principles of fluid equilibrium, and the laws governing the flow of water through orifices, over weirs, in closed conduits, and in open channels. (Lectures and recitations five hours a week for twelve weeks, following course 2*b*.)

Open to students who have completed courses 1, 2, 3, and 4 in Mathematics; required of all students in Civil Engineering.

5 hrs., both semesters. (HOSKINS.)

3. Testing of Materials. — In this course each student is required to make a series of experiments, testing the strength and elastic properties of wrought iron, cast iron, steel, timber, brick, stone, and cement. A careful record of all experiments is required of every student. The course may be elected without cement testing, in which case the credit is two hours. Open to all students who have taken or are taking course 2*b*; required of all students in Civil Engineering.

3 hrs., 2d semester. (HOSKINS.)

II. SPECIAL WORK.

Topographical and Geodetic Engineering.

4a. Elementary Surveying.—This course treats of surveying instruments and their adjustment, followed by the study of the various methods of surveying and their application in actual field work. The drafting of the course includes topographical mapping and sketching. (Lectures and recitations, two hours; drafting and field work, nine hours.) Open to students who have completed courses 1, 2, 3, and 4, in Mathematics and 1*a* in Civil Engineering; required of all students in Civil Engineering and Topographic Geology.

5 hrs, 1st semester. (FISH.)

4b. Elementary Surveying.—An abridgment of course 4*a*, intended for Mechanical and Electrical Engineers. (Lectures, field work, and drafting to take up six hours per week.) Open to students who have completed courses 1, 2, 3, and 4, in Mathematics and 1*a* in Civil Engineering.

2 hrs., 1st semester. (FISH.)

5. Geodesy. — The treatment of this subject will include methods of base line and angle measurements, the adjustment of observations, geodetic levelling, and map projections. (Lectures and recitations, two hours; drafting and field work, nine hours.) Open to students who have completed courses 1 to 5 in Mathematics, and courses 1*a*, 1*b*, and 4*a* in Civil Engineering; required of students who have their major in Geodetic Engineering.

5 hrs., 2d semester. (FISH.)

Railroad Engineering.

6. Economic Theory of Railroad Location — Including Railroad Surveying, Location, and Construction. (Lectures and recitations, two hours; drafting and field work, nine hours.) Open to students who have completed course 4*a* in Civil Engineering; required of all students in Civil Engineering. [Course 6 was given in 1896-97, as a three hour course during the second semester, by Mr. WILLARD BEAHAN, C. E.]

5 hrs., 2d semester. (MARX.)

7. Railroad Operation and Management. — Lectures and recitations. [Course 7 will not be given in 1896-97.]

3 hrs., 1st semester.

It is the intention to offer ultimately a special course in Railroad Engineering in connection with the department of Economics. The collection of railroad books in the Hopkins Library offers exceptional opportunities for research in this line.

Structural Engineering.

8. Elements of Design.— *a. Materials.* The end sought is a knowledge of the physical properties and methods of manufacture of constructive materials, which will lead to the design of safe and economical engineering structures. This includes a study of the growth, supply, and preservation of timber trees, the mineralogy and metallurgy of iron, quarrying, stone cutting, and manufacture of masonary materials, with methods of testing and selecting materials for a given purpose.

b. Details. The work is elementary in character, dealing with the applications of the principles of Mechanics to the design of structural details. Wooden joints, riveted joints, pin-connected joints, and masonary details are taken up in order.

c. Design. The work is intended for general application to the design of structures. The work of course 2 *a* (and *b*) is extended to the analytical and graphical determination of stresses in highway bridge trusses, girders, and mill buildings. Designs of sub- and superstructure, with working drawings, bills of material, and estimate of cost, are made.

Open to students who have completed course 1, and who have completed or are taking course 2; required of all students in Civil Engineering.

5 hrs., both semesters. (WING.)

9. Railway Bridges.— Open to students who have completed course 8. The stresses in modern types of railroad bridges are determined, including cantilever, swing, and suspension spans, masonary arches, and arch ribs. Designs are made by each student to fulfill actual conditions, the parts proportioned, and bills of material prepared as a basis for estimating the cost.

5 hrs., both semesters. (WING.)

Hydraulic Engineering.

12. Water Supply Engineering for Towns and Districts.— Sources of Supply. Collecting and storing of water either for water supply of towns or for irrigation purposes. Settling, filtering, conducting, and delivering of water, including the study and design of all accessory works. (Three hours lectures and recita-

tions, six hours drafting.) Open to students who have completed courses 2, *a* and *b*, 3, 4, and 8; required of all students who take their major in Hydraulic Engineering.

5 hrs., 1st semester. (MARX.)

13. Sanitary Engineering.—Including sewerage of towns and drainage of lands. Special attention will be given to the study of all municipal sanitary problems, such as removal of sewage, destruction of garbage, construction, maintenance, sweeping, and repairs of streets and pavements. (Three hours lectures and recitations, six hours drafting.) Open to students who have completed courses 2, *a* and *b*, 3, 4, 8, and 12; required of all students who take their major in Hydraulic Engineering.

5 hrs., 2d semester. (MARX.)

14. Hydraulic Motors.—A discussion of the theory of the main types of turbines. Special attention is given to the application of graphic methods to the solution of some of the main problems in turbine design. A few lectures on the general theory of energy and on relative motion are given as an introduction to the course. Open to students who have completed course 2.

3 hrs., 1st semester. (HOSKINS.)

15. Construction of Canals, River and Harbor Improvements.—Lectures and Designing as per arrangement. Open to students who have completed courses 2, *a*, *b*, *c*, 3, 4, and 8.

2 hrs., both semesters. (MARX.)

16. Technical Seminary.—Study of German and French Technical Journals. Open only to 4th year students in Civil Engineering.

2 hrs., both semesters. (MARX.)

III. FIFTH YEAR COURSES.

No fifth year courses in Civil Engineering will be given in 1897–98.

MECHANICAL ENGINEERING.

Professor A. W. SMITH, Assistant Professor G. H. MARX, and Assistants PETERSON and SOULE.

The following courses in Mechanical Engineering are offered. In connection with these the student takes courses in mathematics, pure and applied mechanics, chemistry, physics,

and drawing, thus making up the professional part of the course, and may also elect such work from the general courses as time and preparation admit.

1. Shop Work.—*a* Woodworking and Pattern Making. (Two exercises a week, through the year.) *b*. Foundry Work. (Three exercises a week, half year.) *c*. Forge Work. (Three exercises a week, half year.) *d*. Machine shop Work. (Three exercises a week, through the year.) [Course 1, *b* and *d*, will not be given in 1897–98.] Open to all students, and required of students in Mechanical Engineering.

2 or 3 hrs., each semester. (PETERSON, SOULE.)

2. Elementary Machine Drawing.—This work consists of practice in making free-hand sketches of machine parts, from which working drawings, tracings, and blue prints are developed. (Six hours a week in drawing room.)

2 hrs., 1st semester. (G. H. MARX.)

3. Constructive Materials.—Study of the manufacture and physical qualities of materials. Intended to prepare the student for selection of materials for machine parts. Open to students who have had elementary chemistry, and required of students in Mechanical Engineering.

3 hrs., 1st semester. (A. W. SMITH.)

4. Elementary Machine Design.—*a*. Function of Machines; Motion, Force, and Work in Machines. (Three hours a week, lectures and recitations.) *b*. A drafting course applying the principles treated in *a*. (Six hours a week, drafting.) Open to students who have completed solid geometry and who are taking elementary mechanics, and required of students in Mechanical Engineering.

5 hrs., 2d semester. (G. H. MARX.)

5. Elementary Machine Design —*a*. *Machine Elements.* Study of fastenings, bearings, sliding surfaces, etc., of cross sectional and outline forms and of machine support. (Two hours a week, recitations and lectures, six hours in the drafting room, first semester.) Open to students who have completed course 4, *a* and *b*, and who are taking course 2 in Civil Engineering; required of students in Mechanical Engineering. *b* *Proportion of Stress Members of Machines*, including steam engines and boilers. (Two hours a week, lectures and recitations, six hours in the drafting

room, second semester.) Open to students who have completed courses 4 and 5 *a*, and who are taking course 2 in Civil Engineering; required of students in Mechanical Engineering.

4 hrs., both semesters. (A. W. SMITH.)

6. Advanced Machine Design.—A drafting course intended for fourth year students who have completed course 5.

2 hrs., both semesters. (A. W. SMITH.)

7. Steam Engineering.—Mechanical theory of heat and its applications. Lectures and recitations. (Text-book: Ewing's Steam Engine.) Required of third year students in Mechanical Engineering.

2 hrs., both semesters. (A. W. SMITH.)

8. Steam Engineering.—Mechanical laboratory. Testing of Engines and boilers, and experimental investigation of correlated problems. Open to students who have completed course 7, and required of students in mechanical Engineering.

2 hrs., both semesters. (G. H. MARX.)

9. Pumping Machinery.—A lecture course for fourth year students.

2 hrs., 2d semester. (A. W. SMITH.)

Shop and Laboratory Fees.—Two dollars per semester in courses 1*a* and 8; four dollars per semester in course 1*c*.

ELECTRICAL ENGINEERING.

Professor PERRINE, and Instructor FARMER.

Believing that American practice has justified the separation of the Electrical Engineer from the Electrical Manufacturer, and that it has defined the Engineer to be one who is engaged upon the solution of practical problems by the aid of obtainable apparatus, the Electrical Engineering courses have been planned for the constructor of engineering works rather than for the manufacturer of machinery. While keeping this aim in view the rapid changes in the profession have not been lost sight of, and the underlying principles of correct design are dwelt upon to such an extent as will fit the Engineer to arrive at just decisions on the merits of established or proposed methods.

In the complete four years of university work in Electrical Engineering the course is so arranged that, before entering on the studies directly connected with this Department, the student pursues courses in Elementary Mathematics, Mechanics, Physics, and Chemistry; and at the same time that the Electrical Engineering courses are taken, collateral work is carried on in the practice and theory of electrical measurements and mechanical construction.

Students intending to make Electrical Engineering a major are advised, though not required, to present among their entrance subjects, Advanced Algebra, Solid Geometry, Trigonometry, Physics, Drawing, French or German. Special students should have completed English, Elementary Algebra, and Plane Geometry.

UNDERGRADUATE COURSES.

1. Constructive Materials and Machinery.—*a.* Materials and methods of line construction for electric lighting, electric railways, power transmission, telegraphs, and telephones. (First semester.) *b.* The elements of dynamo machine design, with the discussion of the principles involved as exemplified in existing American apparatus used in lighting, power transmission, mining, etc. (Second semester.) Two hours lectures and recitations, three hours drafting. Open to students who have completed course 2 in Physics.

3 hrs., both semesters. (PERRINE.)

2. Engineering Measurements in Electricity and Magnetism.—(Two hours lectures and recitations, and two exercises in the laboratory.) A study of the elements of electricity and magnetism applied to the theory of measurements used in engineering investigations. Open to students who have completed course 1 in Physics, and expected of those carrying course 1 in Electrical Engineering.

4 hrs., both semesters. (FARMER.)

3. Electrical Instrument Construction.—(Two exercises shop working.) Practice in the construction of testing apparatus, small motors and dynamos, switches, arc lamps, and other appliances.

2 hrs., both semesters. (PERRINE, FARMER.)

4. The Elements of Electrical Engineering.—A course of lectures and recitations, with laboratory exercises; including a general review of the subjects of electrical measurements, the

elements of dynamo machine design and its applications in the choice of generators, motors, and transformers. The principles of primary and secondary batteries, the elements of the application of electricity to lighting by arc and incandescent lamps, and a general review of electrical railroad construction and operation. This course is intended for those who are not major students in Electrical Engineering and is designed to give only an elementary understanding of the general applications of electricity to the commoner purposes of electric lighting and power transmission; so much of the theory of electricity and magnetism being given as will enable the student to understand the methods of everyday application. The course will be similar to that given in Slingo & Brooker's text book of Electrical Engineering. Open to all students who have completed course 1 in Physics, or its equivalent.

2 hrs., both semesters. (FARMER.)

5. **Central Station Design and Management.**—The fundamental principles of designing central stations for electric lighting plants and railroads, writing of specifications, awarding contracts, selecting machinery, management and finance of electric plants. Lectures and recitations. Open to students who have completed course 1.

2 hrs., both semesters. (PERRINE.)

6. **Engineering Problems.**—Exercises in the laboratory performing engineering tests and measurements, and a discussion of problems involving their complete application.

2 hrs., both semesters. (PERRINE.)

7. **The Theory of Electricity and Magnetism.**—Including Elementary Alternating Currents. A continuation of course 2, in which the theory of electricity and magnetism will be more completely developed. J. J. Thompson's *Electricity and Magnetism* and Bedell & Crehore's *Alternating Currents* will be used. Open to students who have completed course 2, and intended as an introduction to course 8.

4 hrs., 1st semester. (FARMER.)

8. **Alternating Current Working.**—The practical principles of generating and transmitting alternating currents of electricity. A course of lectures and recitations based on D. C. and J. P. Jackson's *Alternating Currents.* Open to students who have completed course 7.

4 hrs., 2d semester. (PERRINE.)

9. Engineering Law.—A course in contracts and general business law designed chiefly for students in Engineering. Does not count toward graduation.

2 hrs., 2d semester. (ABBOTT, POLLEY.)

10. Recent Applications of Electricity.—A free discussion of the newest applications of electricity appearing in the technical journals.

1 hr., both semesters. (PERRINE.)

In connection with course 10 it is aimed to have as many special lectures as possible. The lectures in 1896-97 have been the following: R. S. MASSON—(1) *Westinghouse Direct Current Apparatus*; (2) *Westinghouse Alternating Apparatus.* F. P. MEDINA—(1) *Simple Morse Telegraph Working;* (2) *The Duplex and Quadruplex.* LOUIS MCKISICK—*Rapid Systems of Telegraphy.* E. A. RIX—*Compressed Air Transmission.* W. STUART SMITH—*Electricity on Shipboard.* MR. HOXIE—*Water Tube Boilers.* J. W. THOMPSON—*The Portland Power Transmission.*

The department acknowledges free copies of the following journals to be used in this course: *Electrical Engineering*, Chicago; The *Electrical World*, New York; The *Electrical Journal*, Chicago; The *Western Electrician*, Chicago; The *Journal of Electricity*, San Francisco; The *India Rubber World*, New York.

Candidates for the degree of *Engineer* in Electrical Engineering are required to continue their course through a fifth year, during which some of the following subjects will be studied, and one of them chosen for especial attention.

11. Dynamo Machinery Design.—The theory and practice of the mechanical and electrical design of direct and alternating current generators and motors.

12. The Theory and Practice of the Design of Inductive Apparatus.

13. Telegraphy and Telephony.—The design and construction of telegraph and telephone lines, apparatus, and switch boards.

14. Special Applications for Electricity.—Apparatus for electric welding, mining, metallurgy; electrolysis in tanning, bleaching, purification of sewage, etc.

Laboratory Fees.—One dollar per semester in course 1; three dollars per semester in courses 2 and 6.

The Department has been especially indebted to the following companies for gifts of apparatus and supplies: Bishop Guttapercha Co., New York; Cutter Elect. and Mfg. Co., Chicago; Electric Storage Battery Co, Philadelphia; The General Electric Co., San Francisco; The Interior Conduit Co., New York; C. S. Knowles & Co., Boston; The Leclanché Battery Co., New York; The New England Butt. Co., Providence, R. I.; The Okonite Co., New York; The Pacific Postal Telegraph Co., San Francisco; John A. Roebling's Sons Co., San Francisco; Washburn & Moen Mfg. Co., San Francisco; Beattie Zinc Works Co., Reading, Mass.; F. W. Roebling, Trenton, N. J.; Stanley Electric Mfg. Co., Pittsfield, Mass.

UNIVERSITY EXTENSION.

The organization of University Extension societies is not undertaken by the University, but its instructors are, in general, prepared to respond to any demands for courses of lectures not conflicting with University duties. They are also willing, whenever occasion arises, to undertake work in Teachers' Institutes, and to take part in lecture courses in neighboring towns.

In addition to a large number of single lectures delivered in the various cities and towns of the State, the following more extended courses of work were presented during 1896-97.

The Fur Seal. Two lectures in San Jose; four lectures in San Francisco. President JORDAN.

Centralization in Municipal Government. Two lectures in San Jose. President JORDAN.

The History of European Civilization. Eight lectures in San Jose. Professor BARNES.

Hygience in Education. Three lectures in San Jose. Professor WOOD.

Money and Transportation. Ten lectures at Camp Roache, Wrights. Professor ROSS.

Shakspere. Twenty lectures at the Coronado Summer School. Professor ANDERSON.

American Literature. Twenty lectures at the Coronado Summer School. Professor ANDERSON.

Bionomics. Twenty lectures at the Coronado Summer School. Professor THOBURN.

Zoology. Twenty lectures and laboratory work at the Coronado Summer School. Professor THOBURN.

English Literature. Eight lectures at the Mt. Tamalpais Military Academy. Professor HUDSON.

Evolutionary Ethics. Three lectures in San Francisco. Professor HUDSON.

Tennyson. Six lectures in San Francisco. Professor HUDSON.

Moral Education. Five lectures at the State Teachers' Institute, Provo City, Utah. Professor GRIGGS.

The Education of the Teacher. Four lectures at Provo City, Utah. Professor GRIGGS.

Social Progress and Personal Ideals. Three lectures in Oakland and San Jose. Professor GRIGGS.

The Divine Comedy of Dante. Eight lectures in San Jose. Professor GRIGGS.

Nature Study, or Science in the Elementary Schools. Eight lectures in San Luis Obispo; six lectures before the San Francisco Teachers' Club; twelve lectures to the teachers of the Oakland City Schools; three lectures to the teachers of the Stockton Schools. Professor JENKINS.

UNIVERSITY LECTURES, ETC.

Public lectures on subjects of general interest, by members of the Faculty or by persons invited from abroad, are given in the Chapel, usually on Tuesday evenings. The following is the list, April, 1896, to April, 1897:

MR. ALEXANDER G. MCADIE, San Francisco. *Lightning and the Electricity of the Atmosphere.*

PROFESSOR WM. H. HUDSON. *1. London Life in Shakespeare's Time. 2. Pepys and his Diary.*

PROFESSOR JULIUS GOEBEL. *1. Object Teaching. 2. Heine as a Poet.*

THE HON. C. B. WATSON, Oregon. *Crater Lake and the Mazamas*, with lantern illustrations.

PRESIDENT DAVID S. JORDAN. *1. Agassiz. 2. Matke and Kotik: a Story of the Mist Islands. 3. The History of the Fur Seal.*

FRU NICO MEYER. *Bjornsen and Ibsen: their Place in the Evolution of Man.*

PROFESSOR H. H. POWERS. *Education and Social Progress.*

PROFESSOR EARL BARNES. *The Child as a Social Factor.*

PROFESSOR F. M. MCFARLAND. *The Zoological Station at Naples*, with lantern illustrations.

MR. G. WHARTON JAMES, Pasadena. *The Grand Cañon of the Colorado*, with lantern illustrations.

PROFESSOR WALTER MILLER. *Olympia*, with lantern illustrations.

DR. O. L. ELLIOTT. *An Old Time Journalist.*

PROFESSOR SAMUEL J. BRUN. *Readings from 'Tales of Languedoc.'*

MR. EDWARD BERWICK, Monterey. *The Nicaragua Canal.*

PROFESSOR BOLTON C. BROWN. *The High Sierras*, with lantern illustrations.

PROFESSOR HENRY B. LATHROP. *The Law of the Church and its Influence on Modern Civilization.*

THE HON. JOHN DAGGETT, San Francisco. *The Siskiyou Indians; their Habits and Ways*, with lantern illustrations.

MR. JOHN BONNER, San Francisco. *Newspaper Reminiscences.*

THE HON. CHAUNCEY M. DEPEW, New York City. *American Opportunity.*

MR. PAUL E. WOLFF, San Francisco. *Fiji: its Inhabitants, their Customs and Manners.*

MRS. BALLINGTON BOOTH, New York City. *The Volunteers.*

MRS. CHAPMAN CATT, New York City. *Equal Suffrage.*

MRS. MILA T. MAYNARD, Los Angeles. *The Suffrage Movement.*

MR. RANDALL HUNT, San Francisco. *The Ethics of Engineering.*

THE REV. W. D. P. BLISS, Boston, Mass. *Socialism.*

DR. MARA L. PRATT. *Some Diseases of Children, and their Effects upon the Mind.*

Commencement Address—May 27, 1896

PROFESSOR MELLVILLE B. ANDERSON. *Hamlet: the Transition from the Contemplative to the Active Life.*

Founder's Day Address—March 9, 1897.

THE REV. M. C. BRIGGS, D. D., San Jose.

Special Lectures Before the Law Department.

MR. FRANK J. POLLEY. *1. Humors of the '49 Justice Courts in California. 2. Sharp Practice at the Early California Bar. 3. How far is it Safe to Criticise a Candidate for Public Office.*

PROFESSOR NATHAN ABBOTT. *Judge Story.*

Intercollegiate Debates, Etc.

An INTERCOLLEGIATE DEBATE, under the auspices of the Associated Students of Stanford and of the University of California, is held in San Francisco in April of each year. A silver medal of the value of one hundred dollars has been offered by the San Francisco *Examiner* to the University first successful in three contests.

The question for 1897 is, "*Resolved*, That the members of the Cabinet should have a seat and a voice in Congress."

The contestants from Stanford are Messrs. ARTHUR B. MORGAN, and JOHN M. SWITZER, and MISS L. L. STEBBINS.

The CARNOT MEDAL, for individual excellence in public speaking, given by the Baron de Coubertin, in honor of the late President Sadi-Carnot, is competed for by three representatives each of Stanford and of the University of California. The subject for 1897 was, "*Resolved*, That the French System of Education is more conducive to the welfare of the French State than would be a system like that of the United States."

The contestants from Stanford were Messrs. S. W. CHARLES, and A. B. MORGAN, and MRS. MARGARET HOOD.

THE UNIVERSITY CHAPEL.

The following is the list of speakers and subjects, April, 1896, to March, 1897, in the University Chapel, Sunday mornings at eleven o'clock, in accordance with the provision noted on page 25.

PROFESSOR EDWARD H. GRIGGS, *1. Spiritual Perspective. 2. The Social and Industrial Crisis.*

THE REV. CHAS. W. WENDTE, Oakland. *The Strength of Manhood.*

PROFESSOR ARLEY B. SHOW. *1. The Still Hour. 2. The Symmetry of Life.*

THE REV. J. K. MCLEAN, D. D, Oakland. *1. Led into the Desert to be Tempted. 2. Living at the top of our Possibilities.*

THE REV. A. H. BRIGGS, Santa Cruz. *The Face of Jesus a Revelation of God.*

PROFESSOR W. W. THOBURN. *1. Where is God? 2. Faith. 3. Bitter Sweet.*

THE REV. H. M. TENNEY, San Jose. *A Greater than Solomon.*

THE RABBI JACOB VOORSANGER, San Francisco. *Three Old Time Dissenters.*

DR. O. L. ELLIOTT. *The Christian Argument.*

THE REV. E. R. DILLE, D.D., San Francisco. *The Christ of To-day.*

THE REV. EDWARD B. SPALDING, D. D., San Francisco. *Personal Responsibility.*

PROFESSOR A. T. MURRAY. *Thanksgiving Address.*

THE REV. BP. JOHN P. NEWMAN, D. D., San Francisco. *The Power and Glory of Self-Control.*

THE REV. GEO. E. WALK, D. D., San Francisco. *The Functions of the Church of To-day.*

THE RABBI JACOB NIETO, San FRANCISCO. *Universal Charity.*

THE REV. HORATIO STEBBINS, D. D., San Francisco. *Nature and Supernature.*

THE RT. REV. WM. F. NICHOLS, D. D , San Mateo. *Will Power for Christ.*

THE REV. CHARLES R. BROWN, Oakland. *The Life more than Meat.*

THE REV. HENRY C. MINTON, D. D., San Anselmo. *The Mission of Life.*

PROFESSOR M. S. CROSS, University of the Pacific. *The Search for Truth.*

PRESIDENT DAVID S. JORDAN. *Putting Away Childish Things.*

THE REV. WM. RADER, San Francisco. *The Bible.*

THE REV. JOHN BALTZLY. *"Whom having not seen, ye love."*

THE RABBI MYER S. LEVY, San Francisco. *Now or Never.*

UNIVERSITY ASSOCIATIONS.

PHILOLOGICAL ASSOCIATION.

Professor JOHN E. MATZKE, President; Professor H. R. FAIRCLOUGH, Secretary.

The University Philological Association was organized September 17, 1892, for the purpose of reading and discussing the results

of investigations in language and literature. The membership consists of the instructors and advanced students in the different language departments of the University. The regular time of meeting is the last Thursday of each academic month, at 2 P. M. The following papers were presented between April, 1896, and March, 1897:

April 30, 1896. Professor WALTER MILLER—*Life and Work of Overbeck.*

September 24. Professor EWALD FLÜGEL—*Interpretation of the Minor Poems and Prologue of Chaucer.*

October 29. Professor ERNEST M. PEASE—(1) *The So-called Deliberative Subjunctive in Latin;* (2) *The Accent of Genitives in -i from Nouns in -ius, -ium.*

November 19. Professor AUGUSTUS T. MURRAY — *Notes on Euripides and Thucydides.*

December 17. Professor EWALD FLÜGEL — *Notes on Chaucer.* Professor JOHN E. MATZKE — *The Unity of Place in Corneille's Cid.*

January 28, 1897. Professor JULIUS GOEBEL—*The Reduplicating Verbs in the Germanic Languages.* Professor H. R. FAIRCLOUGH—*Certain Passages in Theocritus, Vergil, and Homer.*

February 25. Professor F. J. A. DAVIDSON—*On the Origin of the French Alexandrine.*

SCIENCE ASSOCIATION.

The following papers were read before the University Science Association from October 1, 1896, to March 1, 1897:

PROFESSOR R. E. ALLARDICE. *Some Conceptions of the New Geometry.*

PROFESSOR FRANK ANGELL. *Types of Memory.*

PROFESSOR JOHN C. BRANNER. *The Geologic Origin of the Yosemite Valley.*

PROFESSOR D. H. CAMPBELL. *The Flora of Japan.*

The following Popular Science Lectures were given under the auspices of the Association in April and May, 1896:

PROFESSOR G. M. RICHARDSON. *Alchemy.*

PROFESSOR L. R. LENOX. *Steel.*

PROFESSOR D. H. CAMPBELL. *Mosses and Ferns.*

SUMMER COURSES.

The courses outlined below will be offered at the University during the summer of 1897, beginning May 31.

These courses will be opened to regularly matriculated students of the University, to teachers, and to others qualified to undertake the work. As noted in the statements below under the several departments, a number of the courses are offered for the special benefit of teachers.

The following regulations apply to regularly matriculated students of the University:

1. Summer courses for which credit is desired, whether taken in the Summer Schools or by special arrangement, must be regularly registered at the Registrar's Office before June 20.

Summer courses may receive the same credit as the same amount and kind of regular University work. For this purpose sixteen weeks shall be considered a full semester; and courses running four, six, eight, or more weeks shall be estimated at the proper fractional equivalent of a full semester's work. For summer courses of four, six, or eight weeks students may register for not more than four, six, or eight hours respectively; and no student shall receive more than ten hours of University credit for work done during any summer vacation.

2. Credit toward graduation will be given only for courses which have been approved by the professor or professors in the department concerned.

A record of the non-matriculated students in attendance on summer courses will be filed with the Registrar, with such reports as may be of value for future reference.

The fees for summer courses are fifteen dollars for a six weeks' course and twenty dollars for an eight weeks' course, unless otherwise specified.

Applications for information should be addressed Registrar, Summer School, Stanford University, Cal.

GREEK.

Professor FAIRCLOUGH.

1. Elementary Greek.—The essential forms of grammar will be covered rapidly, and after a few recitations the student will be introduced to the reading of easy, continuous narrative. From he first, attention will be paid to the writing of Greek. Earnest

students may lay a firm foundation for the study of the language. Fee, $18 to $24. *6 hrs., weekly, 6 or 8 weeks.*

LATIN.

Assistant Professor DODGE.

1. Beginner's Course.—Preparation for the reading of Cæsar. *5 hrs., weekly, 6 weeks.*

2. College Preparatory Course.—One book of Cæsar and one oration of Cicero will be read, and special attention will be paid to the accompanying prose in Daniell. *5 hrs., weekly, 6 weeks.*

3. Latin Composition and Translation at Sight.—A course similar to Latin 3, undergraduate courses. University credit may be obtained for satisfactory work. *5 hrs., weekly, 6 weeks.*

GERMAN.

Assistant Professor RENDTORFF.

1. Elementary German.—Designed to give a fair reading knowledge of German. Students having had some preparatory training may, upon the successful completion of this course, be admitted to second year German. *6 hrs., weekly, 8 weeks.*

2. Translation of Works of Classical Writers.—Lessing's Minna von Barnhelm. Goethe's Poems. For teachers in high schools and for students who desire to complete one semester of the second year's work in the University. *4 hrs., weekly, 6 weeks.*

3. Teacher's Course.—Lectures on the aims and methods of teaching elementary German. A review of German grammar, including the study of syntax and exercises in German composition. *2 hrs., weekly, 6 weeks.*

Fees: For course 1, $20; for course 2 or 3, $10; for both, $15.

FRENCH.

Assistant Professor BRUN, and Assistant WRIGHT.

1. Elementary French.—Whitney's Grammar, Super's French Reader (Heath & Co.), Halevy's "L' Abbé Constantin" (Heath & Co.). *5 hrs., weekly, 6 or 8 weeks.*

2. **Modern French.** — Whitney's Grammar, second part Balzac, "Eugénie Grandet" (Hachette & Co.), Hugo's "Hernani" (Heath & Co.). *5 hrs., weekly, 6 or 8 weeks.*

Course 1 is intended for students who already having had some French, desire to prepare for the entrance examination in September. Course 2 for students or others who wish to acquire a better reading knowledge of French.

ENGLISH.

Professor HUDSON, Associate Professor NEWCOMER, and Instructor SCHMIDT.

1. **English Composition.** — Six weeks' practice in writing under criticism, with lectures and class-room exercises. *5 hrs., weekly, 6 weeks.* (NEWCOMER.)

2. **Modern Poetry.** — Thirty lectures with illustrative readings. The poets to be studied will be determined by the instructor after consultation with the class. *5 hrs., weekly, 6 weeks.* (HUDSON.)

3. **Anglo-Saxon.** — Designed to give not only a fair reading knowledge of Anglo-Saxon prose and verse, but also an insight into the development of the English language. *5 hrs., weekly, 6 weeks.* (SCHMIDT.)

HISTORY.

Assistant SHELDON.

1. **American History.** — Lectures and studies, treating largely the political, economic, and social tendencies of the last three decades. *5 hrs., weekly, 6 weeks.*

2. **History of the Nineteenth Century.** — Thirty lectures on revolutionary, national, and socialist movements in Europe, with some attention to the colonial expansion of European powers. *5 hrs., weekly, 6 weeks.*

3. **Teachers' Course.** — Deals with works on historical method, the study of the value of historical sources, and recent historical literature. Counts on requirement for teacher's certificate granted to graduates of the University. Fee, $6. *2 hrs., weekly, 6 weeks.*

4. History of Modern Education.— A study of Pestalozzi, Froebel, Herbart, and Preyer, and their influence in America. Fee, $9. *3 hrs., weekly, 6 weeks.*

MATHEMATICS.

Instructor Cox.

1. Elementary Algebra.—Professor Stringham's revision o Charles Smith's Elementary Algebra will be used as a text. Entrance credit. Fee, $20. *5 hrs., weekly, 8 weeks.*

2. Plane Geometry.— Exercises in Constructional Geometry, followed by exercises illustrating methods of analysis of theorems, problems, and loci. Entrance credit. Fee, $20. *5 hrs., weekly, 8 weeks.*

3. Solid Geometry.—Three hours University credit. Fee, $20. *5 hrs., weekly, 8 weeks.*

4. Plane Trigonometry.—Three hours credit. Fee, $20. *5 hrs., weekly, 8 weeks.*

5. Conic Sections.—A course arranged to suit the needs of those registering for it. Five hours credit. Fee, $20. *5 hrs., weekly, 8 weeks.*

6. Determinants.—An elementary course, open to those who have completed elementary Algebra and Trigonometry. Two hours credit. Fee, $15. *3 hrs., weekly, 8 weeks.*

Courses 1 and 2 provide review for those expecting to teach algebra and geometry in high schools, or who are preparing to pass the entrance examinations in these subjects.

PHYSICS

Assistant Professors STEARNS and MURPHY.

1. Elementary Physics.— For teachers and those wishing to present Physics as an entrance subject; intended to give a general outline of the elementary work in Physics. *10 periods, weekly, 6 weeks.*

2. Dynamics, Electricity and Magnetism.— Laboratory work supplemented by lectures and assigned reading. This work will be practically the same as that of University courses 1 and 2. University credit: Dynamics, three hours; Electricity and Magnetism, three hours. *10 periods, weekly, 8 weeks.*

3. Optics; Heat and Sound.— Open to students who have had Dynamics. University credit: Optics, two hours; Heat and Sound, two hours. *10 periods, weekly, 8 weeks.*

4. Electricity and Magnetism.— Open to students who have had the equivalent of course 2, and offering more advanced work, in electrical and magnetic measurements. University credit, three hours. *10 periods, weekly, 6 weeks.*

5. Partial Courses.— For those not wishing to give their whole time to the work.

Fee, for each course, $20.

CHEMISTRY.

Assistant Professor YOUNG, and Assistant ADAMS.

1. Elementary Chemistry.— This course will be practically the same as that given in the first year in the University. Entrance credit or five University hours. Fee, $35.

10 hrs., weekly, 7 weeks.

2. Qualitative Analysis.— Open to students who have had the equivalent of course 1. Three hours of University credit. Fee, $25. *8 hrs, weekly, 6 weeks.*

3. Quantitative Analysis.— Satisfactory work in this course may receive three or four hours credit. Fee, $30 or $35.

8 to 10 hrs., weekly, 7 weeks.

4. Organic Preparations.— Credit, three hours. Fee, $30.

7 hrs, weekly, 7 weeks.

5. Partial Courses.— Students not wishing to devote time sufficient for the completion of course 1 may take one-half of the laboratory course. No credit will be given. Fee, $20.

5 hrs., weekly, 7 weeks.

CIVIL ENGINEERING.

Assistant Professor FISH.

1. Linear Drawing and Lettering.—University credit, one hour. Fee, $5. *8 hrs. drafting, weekly, 6 weeks.*

2. Descriptive Geometry.—For lectures only: university credit, two hours; fee, $25. For lectures with drafting: university credit, six hours; fee, $35.

6 lectures weekly, 6 weeks; or, 6 lectures and 24 hrs. drafting. weekly, 6 weeks.

3. Elementary Surveying.—University credit, five hours Fee, $25.

Lectures, field work, and drafting, 28 hrs. weekly, 6 weeks.

ELECTRICAL ENGINEERING.

Instructor FARMER.

1. Elementary Electrical Measurements.—A discussion of the most essential elementary principles, with a study of some of the commercial instruments, calibration, methods of measuring resistance, current and electro-motive force, and testing of lines and cables for insulation, resistance, and faults. Three hours credit. *3 periods, weekly, 6 weeks.*

2. Electrical Testing.—A course similar to the laboratory work during the first semester in Electrical Engineering 2, and open to students who have completed the equivalent of the first year course in Physics. Three hours credit.

3 periods, weekly, 6 weeks.

Special arrangements may be made with the instructor for an extension of these courses by students willing to devote extra time.

MUSIC.

Lecturer PASMORE.

1. Elementary Harmony and Sight Singing.—Intended for teachers to whom a knowledge of music and singing would be useful in their profession. *3 hrs., weekly, 6 or 8 weeks.*

2. Harmony.—Intended for students who have some practical knowledge of music. *3 hrs., weekly, 6 or 8 weeks.*

3. Voice Culture and Song. *3 hrs., weekly, 6 or 8 weeks.*

4. Private Lessons in singing and music will be given to those who wish them.

THE HOPKINS LABORATORY.

Professors JENKINS and GILBERT, Directors.

The Hopkins Seaside Laboratory, founded by the liberality of Mr. Timothy Hopkins, of San Francisco, is a branch of the biological work of the University, holding its sessions during the summer months. The buildings are located at Pacific Grove, two miles west of Monterey, and stand on a low bluff immediately facing the sea. They consist of two two-story structures capable of accommodating about eighty students, and contain four general laboratories, one lecture room, seventeen private rooms for special investigators, and a dark room for photography. They are provided with aquaria and running water, and all necessary facilities for biological study. The library and apparatus of the University are available for use in the laboratory. During the present year the Biological library has received a large number of valuable additions.

The Laboratory makes provision for three classes of students:

1. Students in the Zoological, Physiological, and Botanical Departments of the University who wish to supplement their studies with work on living marine organisms under the favorable conditions of such a station.

2. Investigators who are prepared to make researches in marine biology, for which the Pacific Coast with its almost unworked field offers exceptional attractions.

3. Teachers or others who desire to become acquainted with marine animals and plants, and to learn the practical methods of their study.

Session of 1896.

The fifth session of the Laboratory was held during the summer of 1896, beginning June 15th.

The instruction was given by Professor JENKINS, Instructors SHAW and HEATH, and Assistants STOLTENBERG and WILBUR.

The following were in attendance:

I. THOSE OCCUPYING INVESTIGATORS' ROOMS.

C. L. Anderson, M. D., Physician, Santa Cruz.

Bashford Dean, Ph. D., Adjunct Professor of Zoology, Columbia University, New York.

Herbert P. Johnson, Ph. D., Assistant Professor of Biology, University of California.

William E. Ritter, Ph. D., Assistant Professor of Biology, University of California.

De Alton Saunders, Professor of Botany, University of South Dakota.

W. M. Wheeler, Ph. D., Assistant Professor of Embryology, University of Chicago.

II. THOSE TAKING REGULAR COURSES.

M. S. Baker, A. B., Teacher in Public Schools, Santa Rosa.

F. H. Billings, A. B., Student in Botany, University.

Margaret Deming, Student in English, University.

P. K. Gilman, Student in Manzanita Hall, Palo Alto.

Mrs. F. M. Greene, Monterey.

R. C. McGregor, Student in Zoology, University.

E. B. Hoag, A. B., Professor of Biology, Throop Polytechnic Institute, Pasadena.

Lyman Harford, Teacher in Public Schools, Santa Rosa.

Miss P. L. Hosmer, Teacher in High School, Hanford.

H. H. Kirby, Jr., Student in Law, University.

Leon La Forge, Student, University of Nebraska.

J. A. Linford, A. B., Professor of Biology, Brigham Young College, Logan, Utah.

Dorsey A. Lyon, Student in Chemistry, University.

William T. Rambo, Student in Economics, University.

Lillian E. Ray, Student in Physics, University.

Louis H. Redon, Student in Physiology, University.

William F. Snow, Student in Chemistry, University.

Charles D. Snyder, A. B., Teacher in High School, Santa Rosa.

Mrs. S. K. White, Teacher in Annie Wright Seminary, Tacoma, Wash.

Session of 1897.

The session of 1897 will begin Monday, June 7th, the regular course of instruction continuing until July 14th. Investigators or advanced students may arrange to continue their work for a longer period. A circular containing detailed information concerning the work of the Laboratory may be had on application to the Registrar or to the Directors.

Fees.—To investigators, the facilities of the Laboratory are offered free. All others will be charged a fee of twenty-five dollars.

Catalogue of Students.

Aaron, Charles Francis,	*Marysville,*	Electrical Eng.
Abbott, George Stanley,	*Salinas,*	Civil Eng.
Abbott, James Francis,	*Greeley, Col.,*	Zoology
Abbott, Philip Fanning,	*Oakland,*	English
Abe, Frank K.,	*Miyagi, Japan,*	Economics
Aberdein, Genevieve Helen,	*Riverside,*	Romanic Lang. *Sp.*
Abrams, Leroy,	*Inglewood,*	Botany
Acworth, Edith Marion,	*Palo Alto,*	Romanic Lang.
Adams, Bristow,	*Washington, D. C.,*	English *Sp.*
Adams, Edith Sherwin,	*Helena, Mont.,*	Drawing
Adams, Frank,	*Wrights,*	Economics *Sp.*
Adams, Frank Hardin,	*Spokane, Wash.,*	Latin
Adams, Marion,	*Wrights,*	History
Adams, Maxwell,	*St. George, W. Va.,*	Chemistry
	A. B., Stanford, 1895; A. M., 1896.	
Adams, Paul Allen,	*Helena, Mont.,*	Physiology
Albee, George Brinton,	*Mayfield,*	Chemistry
	A. B., Stanford, 1896.	
Alford, Bertha Marian,	*Palo Alto,*	Latin
Allaire, Pierre Alexander,	*Deming, N. M.,*	Chemistry
Allan, Leigh,	*Tacoma, Wash.,*	Mathematics
Allen, Anna Matilda,	*Palo Alto,*	Physiology
Allen, Harris Campbell,	*Oakland,*	Greek
	A. B., Stanford, 1897.	
Alsanson, Lucy Maud,	*San Jose,*	Ethics
Ames, Edna Grace,	*Fairhaven, Wash.,*	German
Amesbury, Louise,	*San Francisco,*	Romanic Lang.
	A. B., Stanford, 1897.	
Anderson, Blanche Josephine,	*Oberlin, O.,*	History
	A. B., Oberlin Coll., 1890.	
Anderson, Faith,	*Boston, Mass.,*	Latin
Andrews, Andrela Lilian,	*San Francisco,*	History
Anguiano, Juan Mariano,	*Guatemala, C. A.,*	Civil Eng.
Anspacher, Philip Baum,	*San Francisco,*	History
Arnold, David Lafayette,	*Los Angeles,*	Mathematics
	A. B., Stanford, 1895.	
Arnold, Edward Hagerman,	*North Vernon, Ind.,*	Economics
Arnold, Ralph,	*Pasadena,*	Civil Eng.
Ashford, Percy Volney,	*Haywards,*	Law *Sp.*

Atkinson, William Sacketon,	*Los Gatos,*	German
Austin, Edith P.,	*Seattle, Wash.,*	German *Sp.*
Avery, Clara Aurilla,	*Santa Cruz,*	English
Ayer, Fred Morgan,	*Salt Lake City, Utah,*	Law
Ayres, Edgar Stewart,	*Tropico,*	Mechanical Eng. *Sp.*
Bacher, Johann Adolph,	*San Jose,*	Latin
Bacon, Mary Lord,	*San Jose,*	English
Bailey, Alice Ross,	*Silver City, N. M.,*	Mathematics
Bailey, John Woodson,	*Hillsboro, Or.,*	Law
Bailey, Louis Hamilton,	*San Jose,*	History
Bailie, Samuel Girvin,	*Los Angeles,*	Economics
Baird, Frank Jewell,	*Palo Alto,*	Physiology
Baldwin, George Herbert,	*Pasadena,*	Chemistry
Ballantyne, Samuel,	*Ola, Idaho,*	History
Ballard, Jessie May,	*Seattle, Wash.,*	History
Ballard, Roy Page,	*Seattle, Wash.,*	History
Baltzly, John,	*Indianapolis, Ind.,*	English
A. B., Wittenberg Coll., 1879.		
Bankhead, William Robert,	*Loomis,*	Electrical Eng.
Barnett, John Felix,	*Ukiah,*	History
Barnhisel, Claire Grace,	*San Jose,*	History
Barnhisel, Edith Mary,	*San Jose,*	Physiology
Bartholomew, Earle Ives,	*Decatur, Ill.,*	English
Bartruff, Zoe Sara,	*Bellefonte, Pa.,*	English
Bateman, Victoria,	*Lompoc,*	Geology
Bauer, Hamilton A.,	*San Francisco,*	Law
Baum, Frank George,	*San Jose,*	Electrical Eng.
Beach, Wesley Heman,	*Colton,*	Latin
Beal, Jennie Luella,	*Palo Alto,*	Latin
Bean, Harry Joel,	*San Jose,*	Electrical Eng.
Beans, Frances Levering,	*San Jose,*	English
B. S., Univ. of the Pacific, 1889.		
Beckett, George Marion,	*College Park,*	Law
Beckwith, Emily Hubbard,	*Norwich, Conn.,*	History
Beedy, Josephine Caroline,	*Sausalito,*	Latin
A. B., Stanford, 1897.		
Beedy, Louis Samuel,	*Sausalito,*	Law
Beermaker, Ida Amanda,	*San Jose,*	English
Bell, Alberta,	*Paso Robles,*	English
Bell, Annie May,	*Visalia,*	English
Bell, Frances Fay,	*Eureka,*	Latin
Bell, Henry Herman,	*Eureka,*	Electrical Eng.

Bell, Howard William,	*Oakland,*	History
Bell, James Warren,	*Visalia,*	Economics
Bell, William Lawrence,	*Bradford, Pa.,*	Chemistry
Bell, William Nay,	*Tracy,*	Civil Eng.
Bennett, Charles Josephus C.,	*Buckhannon, W. Va.,*	Education
A. B., Univ. of Nashville, 1889; A. M., 1892; A. M., Stanford, 1896.		
Berry, Fred Leslie,	*Ogden, Utah,*	Law
Biber, Paul E.,	*San Francisco,*	Physiology
Bidwell, Rolfe Bishop,	*Los Angeles,*	Law *Sp.*
Bierman, Ernest Henry,	*Palo Alto,*	German
Biglow, David Carlton Orvis,	*Antioch,*	Law
Birch, Abbie,	*Orland,*	History *Sp.*
Birtch, Fayette,	*San Jose,*	Mathematics
Bishop, Herbert Fiske,	*Alhambra,*	Physiology
A. B., Stanford, 1897.		
Blake, Marguerite May,	*San Francisco,*	Physiology
Blanchard, Marcus,	*College Park,*	History *Sp.*
Blichfeldt, Hans Frederick,	*Palo Alto,*	Mathematics
A. B., Stanford, 1896.		
Bloch, Benjamin I.,	*Boise, Idaho,*	History
Bloom, Mollie Saidee,	*San Jose,*	Mathematics
Bolton, Arthur Lawrence,	*Berkeley,*	Zoology *Sp.*
Bolton, Florence,	*Berkeley,*	Hygiene
Bone, Hugh McCreary,	*Decatur, Ill.,*	History *Sp.*
Borglum, Theodora,	*Omaha, Neb.,*	English
Boring, Blanche Malvina,	*Palo Alto,*	English
Boring, Oramanda,	*Palo Alto,*	Zoology
Boston, Walter Morten,	*Durango, Colo.,*	History
Bowers, Mary Manzanita,	*San Jose,*	English
Boyd, Edith L.,	*Spokane, Wash.,*	English
Boyd, Hugh James,	*Riverside,*	Mathematics
Boyd, John Duncan,	*Riverside,*	Electrical Eng.
Brace, Herbert Manning,	*San Francisco,*	History *Sp.*
Braden, Fred Bassett,	*Los Angeles,*	History
Bradley, Christopher Mason,	*Tacoma, Wash.,*	English
Bradley, Raymond Russell,	*San Diego,*	Mechanical Eng. *Sp.*
Braly, Bertha Hyde,	*Palo Alto,*	English
Brand, Lottie Edith,	*San Francisco,*	German
Brandt, Gerhard Johan Gilles, Jr.,	*North Temescal,*	Electrical Eng.
Brantly, Henry Taylor,	*St. Louis, Mo.,*	English *Sp.*
Brewer, De Witt Clinton,	*Binghamton, N. Y.,*	Civil Eng.
Briggs, Caroline Elizabeth,	*Mountain View,*	Mathematics

Briscoe, John S. Withington,	*Chico,*	Economics *Sp.*
Bristol, Susan Brown,	*Palo Alto,*	English
Bronco, William Carl,	*Tacoma, Wash.,*	Latin
Brooks, George Sanford,	*Hedrick, Ia.,*	History
	A. B., Stanford, 1896.	
Brown, Alice Mary,	*Florin,*	Education *Sp.*
Brown, Carl Grover,	*San Francisco,*	History
Brown, David Ewald,	*Oakland,*	Civil Eng.
	A. B., Stanford, 1897.	
Brown, Lena Josephine,	*San Bernardino,*	English
*Brown, Lyman Van Wickle,	*Riverside,*	Entomology
	A. B., Stanford, 1896.	
Brown, Warren Bateman,	*San Luis Obispo,*	Physiology
Brown, Zaidee Mabel,	*Palo Alto,*	English
Brunton, John,	*Sao Paulo, Brazil,*	Geology
Brunton, Mary Dulley,	*Sao Paulo, Brazil,*	French
Bryan, Adeline Elizabeth,	*Hillsboro, Or.,*	Drawing *Sp.*
Bryant, James Cullen,	*Mayfield,*	Mathematics
Bullock, Newell Harris,	*Pleasant Grove, Utah,*	Education
Bump, Franklin Elisha,	*Wausau, Wis.,*	History
Bund, Johannah Gertrude,	*Fourth Crossing,*	Education *Sp.*
Bunker, Minnie Ella,	*Newman,*	Physiology *Sp.*
Buntin, Emma,	*Terre Haute, Ind.,*	English
Buntin, William Campbell, Jr.,	*Terre Haute, Ind.,*	Physiology *Sp.*
Burcham, Fleming Isaiah,	*Salem, Or.,*	History
Burcham, James Taylor,	*Salem, Or.,*	History
Burckhalter, Bonnie May,	*Truckee,*	English
Burnett, Brady Franklin,	*Corvallis, Or.,*	Law
Burnett, William Wesley,	*San Jose,*	Law
Burns, Clinton Sumner,	*Niagara Falls, N. Y.,*	Civil Eng.
Busch, George Henry,	*Butte, Mont.,*	Law
Bush, Coleman Hall,	*Glenville, W. Va.,*	English
Bush, George William,	*Redding,*	Law
Buss, Hedwig Bertha,	*San Francisco,*	German
Butler, Marie Antoinette,	*Palo Alto,*	English
Byrne, Walter Edward,	*San Bernardino,*	History
Byxbee, Blanche Beatrice,	*Palo Alto,*	English
Caldwell, Mary Lucile,	*San Francisco,*	English
Camp, William Roswell,	*Palo Alto,*	Physiology
Campbell, Mary Grafton,	*Palo Alto,*	Bionomics
Cannon, William Austin,	*Washington, Mich.,*	Botany *Sp.*
Carey, Alice Hannah,	*San Diego,*	Latin

*Work completed, Summer, 1896.

Carhart, John Warren,	*Los Angeles,*	Law *Sp.*
Carle, Nathaniel Allen,	*Seattle, Wash.,*	Mechanical Eng.
Carpenter, Edward Emery,	*San Luis Obispo,*	Civil Eng.
Casement, Anna,	*University,*	English
	B. L., Ohio Wesleyan Univ., 1891.	
Catron, Charles Christopher,	*Santa Fe, N. M.,*	Latin
Cavanaugh, Angus Leonard,	*Ontario,*	Physics
Chandler, Charles Strother,	*Baker City, Or.,*	Law
Chandler, Henry Porter,	*San Jose,*	Greek
Chandler, Katherine A.,	*San Francisco,*	Education
Chandler, Leo St. Clair,	*San Francisco,*	History *Sp.*
Chapman, Bertha Louise,	*Oakland,*	English
	A. B., Stanford, 1895.	
Chappel, Halbert William,	*Washington, D. C.,*	Law
Charles, Mabel Rankin,	*Palo Alto,*	Physiology
Charles, Samuel Watson,	*Palo Alto,*	Law
Chase, Dorothy Hinsdale,	*Oregon City, Or.,*	Drawing *Sp.*
Chase, Warren Doty,	*Danielson, Conn.,*	Economics
Cheney, Edith Germond,	*Los Gatos,*	Hygiene
Clark, Grace Eleanor,	*San Jose,*	Physiology
Clark, Martha Washington,	*Eden Prairie, Minn.,*	German *Sp.*
Clark, Matie Pearl,	*Socorro, N. M.,*	English *Sp.*
Clark, Vivian Verd,	*Socorro, N. M.,*	Chemistry *Sp.*
Clark, Walter,	*Eden Prairie, Minn.,*	Ethics
Cleaveland, Newton,	*Biggs,*	Physiology
Cleaver, Herbert Randall,	*Santa Ana,*	History
Clemans, George,	*Manchester, Ia.,*	Law
Coalman, Mary Elizabeth,	*San Jose.*	Ethics *Sp.*
Coates, Ralph Clarence,	*Rohnerville,*	History *Sp.*
Cobb, William Louis,	*Santa Cruz,*	Geology *Sp.*
Coblentz, Mary Ethel,	*Los Angeles,*	History
Cochran, George Thomas,	*Alicel, Or.,*	History *Sp.*
Coffin, Bessie Rachel,	*Boulder, Col.,*	Latin
Coffin, James Gilman,	*Boulder, Col.,*	Latin
Cohn, Felice,	*Carson City, Nev.,*	Mathematics
Coleman, Cynthia Edna,	*Dixon,*	Latin
Coleman, John Crisp, Jr.,	*San Francisco,*	Geology *Sp.*
Collins, Ethel Claire,	*Santa Ana,*	History
Colliver, John Adams,	*San Bernardino,*	Physiology
	A. B., Stanford, 1896.	
Colliver, M. Adell,	*San Bernardino,*	Education
Colliver, Sim Robinson,	*San Bernardino,*	Physiology *Sp.*

Colt, Alice Maria,	*Santa Barbara,*	English
Condray, Benjamin Franklin,	*Enders, Ark.,*	Mathematics
A. B., Ouachita Coll., 1894.		
Conneau, Myrtie,	*Modesto,*	History
Conneau, William Albert,	*Modesto,*	Law
Connick, Harris De Haven,	*Eureka,*	Civil Eng.
Cook, Blanche Alberta,	*San Jose,*	History *Sp.*
Coolidge, Daniel,	*Riverside,*	English
Coombs, Mabel,	*Marysville,*	Romanic Lang.
A. B., Stanford, 1896.		
Corbin, Elisha Lockhart,	*Union, Or.,*	Law *Sp.*
Cory, Sarah Ann,	*San Jose,*	Latin
Cotton, Joel Sheldon,	*Placerville,*	Education
Cotton, Steuart Walker,	*San Francisco,*	History
Coulter, Minnie,	*Santa Rosa,*	Education
Coverley, John Harvey,	*Whittier,*	Law *Sp.*
Cowles, Rheinhart P.,	*Los Angeles,*	Chemistry
Cowperthwaite, Ellanore,	*Hill Top, Col.,*	English
Cox, Jessie Benten,	*Watsonville,*	English
Cox, Lydia Shipley Bean,	*College Park,*	English
A. B. Penn Coll., 1881		
Crandall, Wesley Clarence,	*Ogden, Utah,*	Physiology
Cressey, William Cram,	*San Jose,*	Physiology
Crippen, John Herbert,	*Point Loma,*	Law
Critchlow, May Uintah,	*Salt Lake City, Utah,*	German
Crocker, Harry Bosworth,	*Geyserville,*	Physiology
Crosby, Fred Arthur,	*San Diego,*	Geology
Cross, Charles Warren,	*East Oakland,*	Mechanical Eng.
Cross, Robert Patterson,	*Chicago, Ill.,*	Law
Crow, Will Henry,	*Redwood City,*	Law
Crowell, Carlena,	*San Francisco,*	Romanic Lang.
Culver, George Bliss,	*Palo Alto,*	Zoology
Curry, David Alexander,	*Redwood City,*	Latin
A. B., Indiana Univ. 1883.		
Curtis, Frank Duezze,	*Santa Clara,*	Chemistry
Curtis, Heber Doust,	*College Park,*	Latin
A. B., Univ. of Michigan, 1892; A. M., 1893.		
Cushman, Florence,	*Palo Alto,*	History
A. B., Stanford, 1896.		
Cuthbertson, Harriet K.,	*Manchester,*	Education
Cuthbertson, Sidney Miller,	*Manchester,*	History
Cutten, Charles Pryde,	*Eureka,*	History
Daggett, John Stewart,	*Pasadena,*	Economics

Daly, John Samuel,	*Sacramento,*	Law *Sp.*
Daly, Kathryn Helen,	*San Francisco,*	History *Sp.*
Dannals, Marion Emma,	*San Diego,*	Mathematics
Dart, Sibyl Louise,	*Rock Island, Ill.,*	Latin
Davidson, Percy Erwin,	*San Diego,*	Education
Davis, Arthur Eugene,	*San Francisco,*	Civil Eng.
Davis, Everly Mahin,	*San Pedro,*	Ethics
Davis, Walter Wells,	*Maynard, Ia.,*	Hygiene

B. S., Upper Iowa Univ., 1893.

Dawson, Edgar Blasdel,	*St. Helena,*	Physiology
Deach, Ivan,	*Peoria, Ill.,*	Greek
Deasy, Michael,	*Mendocino,*	Law
Decarli, Millio Charles,	*Waddington,*	History *Sp.*
Decker, Charles Gordon,	*Redlands,*	Law
De Forest, Jean Lydia,	*San Francisco,*	English *Sp.*
De Haven, Lucie Gates,	*Mountain View,*	Physiology
De Laguna, Bertha,	*Oakland,*	Latin

A. B., Stanford, 1894.

De Laguna, Frederica Hermine,	*Sacramento,*	English

A. B., Stanford, 1896.

Dellinger, Edna Leland,	*New Whatcom, Wash.,*	History
Deming, Margaret,	*Sacramento,*	English
Dempsey, John Henry, Jr.,	*Los Angeles,*	Economics *Sp.*
Dempsey, Walter Eugene,	*Los Angeles,*	Economics *Sp.*
De Neen, Marion,	*Lawrence, Kansas,*	Physiology
Denkinger, Fred Carl,	*Concord,*	Physiology *Sp.*
Derr, Homer Munro,	*Turbotville, Pa.,*	Mathematics
Detrick, Charles Reighley,	*San Francisco,*	Economics

A. B., Harvard Univ., 1891.

Deuel, Harry Austin,	*Denver, Col.,*	Mechanical Eng.
Deyo, George Nelson,	*Los Gatos,*	English *Sp.*
Dibble, Nellie Maria,	*Dakota City, Nebr.,*	History
Dickson, Blanche,	*Eureka,*	Education *Sp.*
Dickson, Susie May,	*Truro, N. S.,*	Zoology
Dickson, William Ernest,	*Eureka,*	History
Diggles, Eliza Marietta,	*Palo Alto,*	Geology
Diggles, Grace Pattison,	*Palo Alto,*	Geology
Diggles, Robert Newton,	*Palo Alto,*	History
Dillon, Charles Ignatius,	*Portland, Or.,*	Law *Sp.*
Dinkelspiel, Grace,	*Steubenville, O.,*	English
Dixon, Anna E.,	*Napa,*	History
Dixon, James Le Roy,	*Needham, Mass.*	Archæology

Dixon, Joseph,	*Townsend, Mont.*,	Law
Dodd, Robert William,	*San Francisco*,	Chemistry
Dole, Charles Sumner,	*Riverside*,	Economics
Dole, Emily Charlotte,	*Riverside*,	German
Dorsey, Florence Eugenia,	*San Francisco*,	Entomology
Doty, Frank Carlton,	*Palo Alto*,	History
A. B., Stanford, 1896.		
Doughty, Frank,	*Napa*,	Mathematics
Doughty, Grace Eva,	*Napa*,	Education
B. S., Napa Coll., 1895.		
Drake, Noah Fields,	*Cincinnati, Ark.*,	Geology
C. E., Arkansas Industrial Univ., 1888; A. B., Stanford, 1894; A. M., 1895.		
Ducker, Edith Victoria,	*Mayfield*,	German
Ducker, Lena Mary,	*Mayfield*,	German
Dulley, Charles John,	*Sao Paulo, Brazil*,	Mech. Eng.
Dulley, Frederick Louis,	*Sao Paulo, Brazil*,	Greek
Dulley, William Brunton,	*Sao Paulo, Brazil*,	Entomology
Dumars, Henry Dunn,	*Washington, D. C.*,	Mech. Eng. *Sp.*
Dunbar, Olive Mabel,	*San Luis Obispo*,	Latin
Dunstan, William John,	*New Almaden*,	Latin
Duprey, Edward James,	*San Francisco*,	History
A. B., Univ. of France, 1888.		
Durrell, Carleton Edgar,	*Pasadena*,	Chemistry
A. B., Stanford, 1895.		
Durrell, Harold Woodman,	*Pasadena*,	Chemistry
Dutton, Harry A.,	*Elsinore*,	Botany
Dyer, Laura Elizabeth,	*Boston, Mass.*,	History
Dyer, Susie Louise,	*Ottawa, Ill.*,	Physiology
Dyke, Charles John,	*Cleveland, O.*,	Economics
Earl, Clara Eloise,	*Napa*,	History
Eberhard, Clara,	*Santa Clara*,	German
Eberhard, Emilie,	*Santa Clara*,	English
Eckhardt, George Welty,	*Gilroy*,	History *Sp.*
Edwards, Ada,	*Indianapolis, Ind.*,	Hygiene *Sp.*
Edwards, Arthur Jordan,	*Minneapolis, Minn.*,	Physics
Edwards, Haven Wilson,	*San Jose*,	Economics
Egan, Ignatius Joseph,	*San Francisco*,	Economics *Sp.*
Elias, Solomon Philip,	*Modesto*,	Law
Emerson, Alice Lizzie,	*Palo Alto*,	Botany *Sp.*
Emerson, Florence,	*Palo Alto*,	Physiology
Emerson, Logan L.,	*Cynthiania, Ind.*,	Greek
A. B., Union Christian Coll., 1893.		
Emmett, Elmer White,	*McCoy, Or.*,	Education

Entler, Frank Lamond,	*Chico,*	Electrical Eng.
Evans, George Herbert,	*Cheyenne, Wyo.,*	Law *Sp.*
Everett, Elizabeth Abbie,	*Sutter City,*	Education *Sp.*
Faber, Henry Clay,	*Palo Alto,*	Education
Faris, Clifton Maupin,	*Sacramento,*	Chemistry
Farmer, Edward Lewis,	*Vallejo,*	Law
Farmer, Elmer Elsworth,	*Palo Alto,*	Electrical Eng.
	A. B., Stanford, 1895.	
Farmer, Luella Bell,	*Palo Alto,*	German *Sp.*
Fay, Alexandra,	*Anaheim,*	Education
Ferguson, Agnes Eva,	*Stockton,*	Latin
Ferguson, Grace Hamilton,	*Palo Alto,*	Romanic Lang.
Ferguson, James,	*Olympia, Wash.,*	Ethics
Ferguson, Nellie Prather,	*Olympia, Wash.,*	Hygiene *Sp.*
Ferrel, May Geraldine,	*Palo Alto,*	English *Sp.*
Ferris, Ermina,	*Denver, Col.,*	English
	B. S., Wellesley Coll., 1892.	
Fickert, Charles Marron,	*Bakersfield,*	History
Fielder, Ortha Belle,	*Dansville, N. Y.,*	History
Filcher, Ralph Emerson,	*Auburn,*	Economics
Fisher, Forest Starkey,	*The Dalles, Or.,*	Law *Sp.*
Fisher, Howard Frederick,	*Calistoga,*	Chemistry *Sp.*
Fletcher, William Baldwyn, Jr.,	*Indianapolis, Ind.,*	Law
	A. B., Stanford, 1897.	
Flinn, Anna Wyman,	*Albany, Or.,*	English
	B. S., Albany Coll., 1892.	
Flinn, Orpha Josephine,	*Albany, Or.,*	English
	B. S., Albany Coll., 1894.	
Flint, E. Royal,	*Palo Alto,*	Latin
Flint, Maude,	*Palo Alto,*	English
Forsyth, George Thomas,	*Salinas,*	Mechanical Eng. *Sp.*
Fowler, Una Eugenia,	*Los Angeles,*	English
Fox, Francis St. Joseph,	*Red Lodge, Mont.,*	Economics
Fox, Paul,	*Nipomo,*	History
Francis, George Horton,	*Napa,*	History
Frank, Miriam,	*Victoria, B. C.,*	English
Fraser, Anna Graeme,	*San Jose,*	History
Frasier, Emory Melvon,	*Monterey,*	Drawing *Sp.*
Frear, Caroline,	*E. Oakland,*	Education
	B. S., Wellesley Coll., 1893.	
Freeman, Lewis Ransom,	*Pasadena,*	Law
Freeman, Mary,	*Woodland,*	English
French, Clara Graves,	*Chico,*	English

French, Henry,	*San Jose,*	Law *Sp.*
Frost, Everard Charles,	*Maryville, Mo.,*	Chemistry
Frost, George Henry,	*San Diego,*	English
Fry, H. Ray,	*San Jose,*	Law
Fry, Winifred Sophie,	*Arcata,*	Physiology
Fuller, Marion,	*San Mateo,*	English
Furbush, George Ernest,	*Palo Alto,*	English
Gaches, Samuel Francis,	*La Conner, Wash.,*	History
Galt, John Martin,	*Sterling, Ill.,*	History
Gamer, Albert Cylvester,	*San Jose,*	Chemistry *Sp.*
Garfield, Raymond Sheldon,	*Napa,*	Geology
Garrett, George Washington,	*Okolona, Ark.,*	Law
	A. B., Ouachita Coll., 1896.	
George, Carolyn,	*College Park,*	Zoology
George, Mary Wilson,	*College Park,*	Psychology
Gerichs, E. Louese,	*San Jose,*	German
Gerichs, Minnie Mae,	*San Jose,*	German *Sp.*
Gerrans, Amy,	*Exeter, England,*	English *Sp.*
Gibbs, James Philip,	*Huntsville, Texas,*	Physiology
Giblin, Anna Elizabeth,	*Oakland,*	English
Gibson, Gion Wakefield,	*Williams,*	Civil Eng.
	A. B., Stanford, 1896.	
Gifford, Perl Vincent,	*Erie, Pa.,*	History
Gifford, William Pitt,	*Erie, Pa.,*	Law
Gilchrist, Samuel Augustus,	*Portland, Or.,*	Geology *Sp.*
Gillette, Benjamin Taswell,	*Los Angeles,*	Chemistry
Gillis, Sarah Cecelia,	*Mt. Pleasant, Ia.,*	German
Gilman, Grace Clyde,	*San Diego,*	German
Gilman, Ralph Edson,	*San Diego,*	Electrical Eng.
Goetz, Adolph Frederick,	*Glendora,*	Ethics *Sp.*
Goldstein, Alfred E.,	*San Francisco,*	History
Goodhue, Carrie Amanda,	*Oakland,*	Hygiene *Sp.*
Gottschalk, Otho Baldwin,	*Los Angeles,*	Law *Sp.*
Grant, Edna May,	*Sacramento,*	History
Graves, Walter Huddleston,	*Oakland,*	Latin
	A. B., Univ. of California, 1895.	
Gray, Charles Alfred,	*San Jose,*	Law
Greeley, Arthur White,	*San Jose,*	Zoology
Green, Charles A.,	*Sioux City, Ia.,*	Economics
Green, George Matthew,	*Placerville,*	Education
Green, Lillian Pearle,	*Knightstown, Ind.,*	English
Green, Maude Agnes,	*San Jose,*	English

Green, Ruby Hazel,	*Knightstown, Ind.,*	History
Greenebaum, Fred Henry,	*San Francisco,*	Law
Greenleaf, Charles Hunt,	*Palo Alto,*	Law
Greenleaf, George Ravenscroft,	*Berkeley,*	Electrical Eng.
Gregory, John Munford, Jr.,	*Suisun,*	Law
A. B., Stanford, 1896.		
Gregory, Linden Irwell,	*Los Angeles,*	Economics
Gregory, Maude Bertina,	*Los Angeles,*	Drawing
Gregory, Thomas T. C.,	*Suisun,*	History
Grieb, Maud Louisa,	*Arroyo Grande,*	History
Griffin, Jesse Richard,	*Oakdale,*	Law
Grow, Edward Eugene,	*San Bernardino,*	Elec. Eng. *Sp.*
Grunsky, Herman Washington,	*Stockton,*	Economics
Guidery, Roy E.,	*Oroville,*	Economics
Gundersen, Alfred Ludwig Georg,	*Portland, Or.,*	Physics
Gundersen, Carl,	*Portland, Or.,*	Mathematics
Gunn, Francis George,	*Kelseyville,*	Zoology *Sp.*
Gussefeld, Clara,	*San Jose,*	German *Sp.*
Gwartney, John George,	*Mayfield,*	Mathematics
Haas, Charles Edmund,	*Los Angeles,*	German
Haffey, James LeRoy,	*Highlands,*	Law
Hall, Albert Ludwig,	*Pasadena,*	Greek
Hall, Effa,	*Dixon,*	English
Hall, Ferdinand Lloyd,	*Newcastle,*	Economics
Hambly, Winifred,	*West Bridgewater, Mass.,*	English
Hamilton, Parnie Olive,	*Westley,*	German
Hammond, Edith Sybil,	*San Francisco,*	Physiology
Hanscom, Willis Haycock,	*Palo Alto,*	Physiology
Harkins, William Draper,	*Escondido,*	Electrical Eng. *Sp.*
Harrington, William Swayzee,	*St. Helena,*	Law *Sp.*
Harter, Joseph L.,	*Flora, Ind.,*	Law
A. B., Indiana Univ., 1894.		
Harter, Lloyd Elliott,	*San Jose,*	English
Hartwell, Robert William,	*Kirkwood, Ill.,*	Law *Sp.*
Harvey, Frederic Estabrook,	*Napa,*	Geology *Sp.*
Harwood, Henry,	*Louisville, Ky.,*	Psychology
A. B., Stanford, 1896.		
Haskell, Jessie Judson,	*Bradford, Pa.,*	History
Haskell, Katharine Lois,	*Bradford, Pa.,*	Chemistry
Haslacher, Alfred,	*Oakdale,*	Economics
Hatch, Paul,	*Oregon, Ill.,*	Civil Eng.
Hausch, Charles Henry,	*Visalia,*	Electrical Eng.

Haven, Martha Elizabeth,	*Oakland,*	English
	A. B., Stanford, 1896.	
Hawley, Clarence Edgar,	*Saticoy,*	Education
Hawley, Harriet Hand,	*Palo Alto,*	Ethics
Hayden, Carl Trumbull,	*Tempe, Ariz.,*	Economics *Sp.*
Hays, Malcolm McCullough,	*Los Angeles,*	Law
Hazlett, Ida Crouch,	*Denver, Col.,*	Economics
Hazzard, George Hercules,	*San Diego,*	English
	A. B., Stanford, 1897.	
Hazzard, Harry Conwell,	*San Diego,*	Economics
Healey, John Edward,	*Ventura,*	History
Hearne, Eleanor Virginia,	*San Diego,*	English
Hedger, Henry Harrison,	*San Francisco,*	Electrical Eng.
Heller, Edmund,	*Riverside,*	Zoology
Henion, Harry Sears,	*Warm Springs,*	Economics
Henne, Chris,	*Los Angeles,*	Mechanical Eng.
Henry, Bessie Edson,	*College Park,*	English
Henry, Lou,	*Monterey,*	Geology
Henry, William Fiske,	*Dixon,*	English
Herold, Ada Elizabeth,	*San Jose,*	History
Herrold, Charles David,	*San Jose,*	Physics
Hervey, Annie Cabe,	*Santa Ana,*	English
Hervey, Elizabeth,	*Santa Ana,*	English
Hiatt, Albert Samuel,	*Napa,*	Economics
	A. B., Napa Coll., 1896.	
Hickok, Olney Otis,	*Colusa,*	Economics
Higley, Brodie Gilman,	*Hartford, N. Y.,*	History
Hill, Edith Louise,	*Pasadena,*	Latin
Hill, Harold Phillips,	*Redlands,*	Physiology
Hill, Howard Gilman,	*Redlands,*	Physiology
Hindry, Horace Hayes,	*Denver, Col.,*	Law
	A. B., Stanford, 1897.	
Hindry, Nettie Eliza,	*Denver, Col.,*	Latin
Hobart, Gertrude Lazell,	*Ojai Valley,*	History *Sp.*
Hobson, Edna Mary,	*Eastland,*	English
Hodgson, Eunice Hazel,	*San Francisco,*	Ethics
Hogevoll, Swan Taraldson,	*Palo Alto,*	Law
Hogle, Charles Edward,	*Palo Alto,*	Electrical Eng.
Hogue, Clara Elizabeth,	*Santa Paula,*	Physiology
Holbrook, Evans,	*Onawa, Ia.,*	History
Holley, Carl Hiram,	*Palo Alto,*	Electrical Eng.
Holly, Ernest Deforest,	*Dixon,*	History
Holmes, Edward Wilson,	*Dover, Del.,*	Law

Holmes, Lela Olodyne,	*Kearney, Neb.,*	English
Holmes, Helen Lathrop,	*Tacoma, Wash.,*	Romanic Lang.
Hood, Margaret Graham,	*Pacific Grove,*	Education
Hooper, Kate Alaska,	*San Bernardino,*	English
Hoover, Bessie Belle,	*Gilroy,*	English *Sp.*
Hoover, Oliver Stanton,	*Cedron, O.,*	Mathematics
Hopkins, Alfred James,	*Sacramento,*	Physiology *Sp.*
Hopper, Bernal Mirza,	*Clifton,*	Mathematics
Horst, Carl Herman,	*Butte, Mont.,*	Physiology
Horstmeyer, Lulu Catherine,	*Napa,*	History
Hosmer, Alexander Townsend,	*Tacoma, Wash.,*	Economics.
Howard, Fred Sisco,	*Baldwinsville, N. Y.,*	History
Howe, Agnes Emmons,	*Ventura,*	Economics
Howe, Susan Fowler,	*Genoa, N. Y.,*	Education

B. S., Cornell Univ., 1892.

Howell, John Samuel	*Hopplnd,*	Mechanical Eng. *Sp.*
Howse, Emma Ellen,	*Palo Alto,*	History *Sp.*
Hubbard, Ralph Beatty,	*Los Angeles,*	Geology
Hull, Warren,	*Palo Alto,*	History
Hulme, Edward Maslin,	*Portland, Or.,*	English
Hulme, Elizabeth Ann,	*Portland, Or.,*	Physiology *Sp.*
Hume, Elsie May,	*Oakland,*	History
Hunt, Albert Perry,	*Warrensburg, Mo.,*	Economics
Hunt, Augusta Lawrence,	*Warrensburg, Mo.,*	English
Hunt, Frank Davis,	*Santa Ana,*	Economics
Hurt, Arthur Raymond,	*Santa Fe, N. M.,*	Latin
Huston, Harry Lee,	*Armour, S. D.,*	Geology
Hutchinson, Eberly,	*Johnstown, N. Y.,*	English

A. B., Harvard Univ., 1895.

Huxtable, Alfred Smith,	*Victoria, B.C.,*	Electrical Eng *Sp.*
Hyde, Harriet Sophia,	*San Francisco,*	Mathematics
Hyde, Mary Elizabeth,	*Santa Clara,*	Education
Irwin, Wallace Admah,	*Denver, Col.,*	Latin
Irwin, William Henry,	*Denver, Col.,*	English
Jack, Mary Catherine,	*Truro, N. S.,*	English *Sp.*
Jackson, Commodore Stephen,	*Canyonville, Or.,*	Law
James, Edwin,	*Paso Robles,*	Civil Eng. *Sp.*
James, Harlean,	*Denver, Col.,*	History
James, Laura Garner,	*College Park,*	English
James, Robert Revelle,	*Danielson, Conn.,*	Electrical Eng.
Jarnick, Joseph,	*Almond, Wis.,*	Latin *Sp.*
Jeffs, Alexander Samuel,	*Kent, Wash.,*	Law

Johnson, Daisy Deane,	*Etna Mills,*	Botany
Johnson, Grace A.,	*Etna Mills,*	English
Johnson, Mary Middendorf,	*Chicago, Ill.,*	Law *Sp.*
Johnson, Mattie,	*Los Angeles,*	Mathematics
Ph. B., Hamline Univ., 1892.		
Johnson, Merle DeVore,	*Oregon City, Or.,*	History
Johnson, Oscar Clarence,	*San Francisco,*	Law *Sp.*
Johnson, Rose,	*Los Angeles,*	Hygiene
Johnston, Fannie Ella,	*College Park,*	Education
B. S., Cornell Coll. (Ia.), 1884; M. S., 1887.		
Johnston, Howard Charles,	*Rushsylvania, O.,*	Electl. Eng. *Sp.*
Johnston, William Lee,	*Palo Alto,*	Mechanical Eng.
Johnston, William Wood,	*Detroit City, Minn.,*	Mech. Eng.
Jones, Caroline Dana,	*Oakland,*	Latin *Sp.*
Jones, Florence Llewellyn,	*Los Angeles,*	English
Jordan, Alice May,	*Napa,*	Education
B. S., Napa Coll., 1896.		
Jordan, Clement Elisha,	*Napa,*	Economics
Ph. B., Napa Coll., 1896.		
Jordan, Edith Monica,	*Palo Alto,*	History
Jordan, William Francis,	*North Ontario,*	Electrical Eng.
Joslin, Arba Vanderburg,	*Antioch,*	Electrical Eng.
Joss, Horace Wilder,	*Red Wing, Minn.,*	Economics
Jost, Fred,	*San Francisco,*	Mechanical Eng.
Joyce, Fred Lawerance,	*Redwood City,*	Physiology
Kaiser, Ida E.,	*Mayfield,*	German *Sp.*
Kalenborn, Arion Siegfried,	*Tacoma, Wash.,*	Electrical Eng.
Karr, Ada Welch,	*San Jose,*	Mathematics
Karsted, Alfred,	*Helena, Mont.,*	Physiology *Sp.*
Kasano, Hubert Yeizo,	*Tokio, Japan,*	Civil Eng.
Kasten, Laura Valeria Charlotte,	*Hong Kong, China,*	German *Sp.*
Kasten, Lillian,	*Hong Kong, China,*	German *Sp.*
Kaufman, Adolph G.,	*Olympia, Wash.,*	Electrical Eng.
Keatinge, Richard Harte,	*Palo Alto,*	Civil Eng.
Keesling, Francis Valentine,	*San Jose,*	Law
Keller, Clara Drusila,	*San Bernardino,*	Education
Kellogg, Emma,	*Palo Alto,*	English *Sp.*
Kellogg, Estelle Lucinda,	*Oakland,*	Latin
Kemp, William Webb,	*Palo Alto,*	History
Kerrigan, Herbert William,	*Portland, Or.,*	History *Sp.*
Kibbey, Adelaide Sipes,	*Minneapolis, Minn.,*	Education
Kidder, Marie Margaret,	*Pasadena,*	History

*Kimball, Dexter Simpson,	*Port Gamble, Wash.*,	Mech. Eng.
A. B., Stanford, 1896.		
King, Clarence Van Houden,	*Everett, Wash.*,	Law
King, Murray Reid,	*King City*,	Physiology *Sp.*
Kingsbury, Susan Myra,	*San Francisco*,	History
A. B., Univ. of Pacific, 1890.		
Kingsland, Joseph, Jr.,	*Nutley, N. J.*,	Electrical Eng.
B. S., Stevens Institute, 1886.		
Kinney, Burt Ornon,	*Palo Alto*,	History
Kinney, Ledru Byron,	*Los Angeles*,	Law *Sp.*
Kirby, Harry Harrison, Jr.,	*Oakland*,	Law *Sp.*
Klauber, Hugo,	*San Diego*,	Civil Eng.
Klauser, Rosa,	*Farmington, Conn.*,	German *Sp.*
Knecht, Emil Charles,	*Los Angeles*,	Geology
Knoch, Charlotte A.,	*Los Angeles*,	German
Knoche, Edward Louis Herman,	*San Jose*,	Botany
Kohler, Frederick William,	*St. Helena*,	Education *Sp.*
Kohn, Samuel Milton,	*Ogden, Utah*,	History
Kroeck, Louis Samuel,	*Los Angeles*,	Physiology
B. S., Univ. of Pacific, 1895.		
Kurtz, Edith Rosine,	*San Francisco*,	English *Sp.*
Lake, Francis Webster,	*Jamestown, N. Y.*,	History
Lake, Viola May,	*Santa Cruz*,	Education
Lamb, Ada Julia,	*Los Angeles*,	History
Lamb, Frank Haines,	*Walnford N. J.*,	Botany
Lanagan, James Francis,	*Denver, Col.*,	Latin
Lawton, Frank Chaplain,	*Colorado Springs, Col.*,	Elec. Eng. *Sp.*
Lea, Clarence Fred,	*Highland Springs*,	Law *Sp.*
Leach, Frank Sayre,	*Sedalia, Mo.*,	Electrical Eng.
Leavitt, Granville E.,	*Yerington, Nev*,	Physiology
Leddy, Mary Frances,	*Santa Rosa*,	English
Lee, Francis Valentine T.,	*Victoria, B. C.*,	Electrical Eng.
Lehners, Carl Herman,	*San Francisco*,	Physiology
Leiter, Otho Clarke,	*Portland, Or.*,	History
Leiter, Rufus Albertus,	*Portland, Or.*,	Law
Lemon, Winnifred,	*Tacoma, Wash.*,	Physiology
Lendrum, Birney Alexander,	*San Jose*,	Physiology
Lesley, Chloe Francis,	*Santa Ana*,	Zoology
Lesley, Elizabeth,	*Santa Ana*,	Mathematics
Lesley, Everett Parker,	*Santa Ana*,	Mechanical Eng.
Leventritt, Mortimer Clifford,	*San Francisco*,	History *Sp.*

*Work completed, Summer School, 1896.

Lewis, Elizabeth Babette,	*San Diego,*	German
Lewis, John Howard,	*Portland, Or.,*	Civil Eng.
Lewis, Winford Lee,	*Gridley,*	Economics
Libby, William Sumner,	*Pomona,*	Psychology
A. B., Stanford, 1896.		
Lillard, Jeremiah,	*Santa Barbara,*	Physiology
Lillick, Ira Shell,	*Lawrence,*	Law
A. B., Stanford, 1897.		
Linck, Lizzette,	*San Diego,*	Chemistry
Lindsay, David William,	*Mayfield,*	Education
Liter, Thomas Johnson,	*Palo Alto,*	Electrical Eng. *Sp.*
*Loehr, Adeline Matilda,	*St. Louis, Mo.,*	German
A. B., Stanford, 1896.		
Logan, Raymond William,	*The Dalles, Or.,*	Physiology
Long, Della Justine,	*St. Paul, Minn.,*	Education
Longley, John Artemas,	*Mountain View,*	Romanic Lang.
A. B., Stanford, 1896; A. B., Harvard Univ., 1896.		
Lougheed, Herbert Edgar,	*Los Angeles,*	Greek *Sp.*
Lull, George, Jr.,	*Cambria,*	Law
Lurch, Jacob B.,	*Cottage Grove, Or.,*	Physiology
Lyle, Annie Galloway,	*San Francisco,*	Chemistry
A. B., Stanford, 1895.		
Lyman, Edmund Rensselaer,	*Palo Alto,*	Chemistry
A. B., Stanford, 1896.		
Lynn, Ellen Utley,	*Cambria,*	English
Lyon, Addi Warren,	*Artesia,*	Electrical Eng.
Lyon, Dorsey Alfred,	*Las Vegas, N. M.,*	Chemistry
McCall, Elizabeth Adeline,	*Oakland,*	Economics
McChesney, Leroy Edward,	*Alameda,*	History
McClellan, Jessie Eugenia,	*Crawfordsville, Ind.,*	English
McCormack, Edgar W.,	*Portland, Or.,*	Civil Eng.
MacCoy, William Edward,	*Pasadena,*	Law *Sp.*
McCray, Stella Alice,	*Palo Alto,*	Physiology
McDonnell, Robert Emmet,	*Bozeman, Mont.,*	Civil Eng.
A. B., Stanford, 1897.		
McDowell, John Ezra,	*Ashland, O.,*	Economics
McDowell, Percy,	*Ashland, O.,*	English
McElwaine, Robert,	*Dixon,*	English
Mc Fadden, Effie Belle,	*Santa Ana,*	Botany
McFadden, Thomas Lewis,	*Placentia,*	History
McGilvray, Donald,	*Pasadena,*	Law

*Work completed, Summer School, 1896.

McGinty, Arthur Thomas,	*San Francisco,*	Elec. Eng. *Sp.*
McGowan, Edward Allen,	*San Mateo,*	Economics
McGregor, Richard Crittenden,	*Denver, Col.,*	Ethics
McGuire, William Lewis,	*Hanford,*	Law
McHenry, Joseph Arthur,	*Santa Maria,*	History
McInnis, William Carr,	*San Francisco,*	History
McIntosh, Walter Marlette,	*Los Angeles,*	Law
McIntosh, William Peter, Jr.,	*Los Angeles,*	Law
McIntyre, Eugene Blake,	*Menlo Park,*	Geology
Mackay, Thomas Henry,	*Vancouver, B. C.,*	Ethics
McKee, Georgia,	*San Jose,*	Romanic Lang.
Mackinnon, Duncan,	*Oakland,*	Education
Mackintosh, Gertrude,	*Seattle, Wash.,*	English
McLain, Robert B.,	*Wheeling, W. Va.,*	Zoology
McLaine, Claude I.,	*San Francisco,*	Civil Eng. *Sp.*
McLaine, William Laughlin,	*San Francisco,*	Economics
Maclaren, Miriam Evalyn,	*San Jose,*	History
Maclean, Donald Gray,	*San Francisco,*	Physiology
McManis, John T.,	*Peru, Ind.,*	Education
McMillan, Helen,	*San Diego,*	English *Sp.*
McMurtry, Belle Stuart,	*Los Gatos,*	History
McNary, Charles Linzy,	*Salem, Or.,*	Law *Sp.*
McNeil, Wilbur Charles,	*Sioux City, Ia.,*	Economics
Macy, Lloyd Richardson,	*Pasadena,*	Mathematics
Madden, Gustavus Redding,	*San Francisco,*	Chemistry *Sp.*
Madden, Martha Elizabeth,	*Milton, Pa.,*	English *Sp.*
Maddock, George Frederick,	*Duluth, Minn.,*	Elec. Eng. *Sp.*
Maddren, Alfred Geddes,	*Washington, D. C.,*	Zoology *Sp.*
Madsen, Robert Hansen,	*Palo Alto,*	Physiology
Maher, Minnie,	*Sutter Creek,*	Botany
Mailer, Jessie Willis,	*Santa Rosa,*	Physiology
Main, Marylyn,	*Santa Barbara,*	Physiology
Maitland, Louise,	*Palo Alto,*	Education
Mallery, John Henry,	*Barry, Ill.,*	Physiology
Mallory, Llewellyn Bell,	*Los Gatos,*	Education
Mallory, Thomas Matteson,	*Winston, Mo.,*	Law
Mann, Laura Louise,	*San Jose,*	English
Mannon, Charles McFerson,	*Ukiah,*	History
Mansfield, Edith,	*Indiana, Pa.,*	Education
Manzer, Lottie Mabel,	*San Jose,*	English
March, Maud,	*Narberth, Pa.,*	Hygiene *Sp.*
Markham, Marie,	*Pasadena,*	Romanic Lang.

Martin, Anna Henrietta, *Reno, Nev.*, History
A. B., Univ. of Nevada, 1894; A. B., Stanford, 1896.

Martin, Emma Louise, *Rahway, N. J.*, English
A. B., Stanford, 1897.

Martin, Gertrude Alice, *Reno, Nev.*, Romanic Lang.

Marx, Harriet Grotecloss, *Palo Alto*, Drawing
B. S., Cornell Univ., 1884.

Marx, Joseph, *Pasadena*, Electrical Eng.

Mason, Gertrude Helen, *San Jose*, English
Ph. B., Univ. of Mich., 1876; Ph. M., 1887.

Matheson, Kenneth Gordon, *Cheraw, S. C.*, English

Mathews, Julia, *Los Angeles*, English *Sp.*

Matthews, Frank Cameron, *Palo Alto*, Physiology

Maxwell, Lee Hendron, *Palo Alto*, Law

Maxwell, Mary Katharine, *Oakland*, Chemistry *Sp.*

Meiklejohn, David Forbis, *Butte, Mont.*, Chemistry

Merritt, Mary Elizabeth, *Woodland*, Romanic Lang.

Metschan, Philip Louis, Jr., *Salem, Or.*, History

Metteer, Charles Franklin, *Pacific Grove*, Law

Metzler, Frances, *Tacoma, Wash.*, English

Meyer, Abe Lucien, *San Francisco*, German

Meyer, Adele, *Coronado*, German

Meyer, Catherine Bertha, *Palo Alto*, German

Meyer, Emma Elizabeth, *Coronado*, German

Meyer, Raymond Daniel, *Carbon, Wyo.*, Civil Eng.

Miller, Elmer Isaiah, *Palo Alto*, History
A. B., Stanford, 1896.

Miller, Nelson Dorrington, *Steubenville, O.*, Law

Mills, Helen Hall, *Menlo Park*, Entomology *Sp.*

Miner, Edith Emily, *North Temescal*, Hygiene *Sp.*

Mitchell, Fannie Howe, *Ashtabula O.*, Drawing

Montieth, Andrew, *San Francisco*, Ethics *Sp.*

Moody, Dora Estey, *Pasadena*, German

Morden, Lucena Mandana, *Portland, Or.*, History *Sp.*

Morgan, Andrew Bertram, *Palo Alto*, Law

Morgan, Edward Ellsworth, *Portland, Or.*, Law

Morgan, Grace Cecelia, *Ontario*, Latin

Morley, Agnes, *Datil, N. M.*, Economics

Morrison, Frank William, *Saxton's River, Vt.*, Law
A. B., Stanford, 1896.

Morrow, William Carr, *Portland, Or.*, History

Morse, Harry Wheeler, *San Diego*, Chemistry
A. B., Stanford, 1897.

Morse, Newell Obadiah,	*Santa Clara,*	Law
Morton, Harriet Mason,	*Palo Alto,*	Entomology
Mosher, Katherine Anthy,	*Long Beach,*	Latin
Moulton, John Carroll,	*Los Angeles,*	Electrical Eng.
Mount, Helen Viola,	*Palo Alto,*	Romanic Lang.
Muir, Lewis Clark,	*Alameda,*	Physiology
Mullins, Joanna Muriel,	*Mayfield,*	History
Murphy, Chester Griffin,	*Salem, Or.,*	Latin
Murphy, James Edmund,	*San Francisco,*	Law
Murray, Jennie Deuchar,	*Eureka,*	German
Nakamura, Hatsuwo,	*Tokio, Japan,*	Chemistry
Negishi, Shin,	*Saitama, Japan,*	Education
Nelson, Andrew Edward,	*Paso Robles,*	German
Newman, Oliver,	*Dixon,*	History
Nichols, Bernard Charles,	*Grand Rapids, Mich.,*	Civil Eng.
Nichols, Robert Gail,	*Coronado,*	Architecture *Sp.*
Nichols, Walter Edmund,	*Hoboken, N. J.,*	Economics
Noble, Frederic Scott,	*Dunsmuir,*	Civil Eng.
Noble, Irvine Morrison,	*San Rafael,*	Chemical Eng.
Nourse, Joseph Pomeroy,	*Santa Ana,*	Latin
Nourse, James Rittenhouse,	*Santa Ana,*	Economics
Nourse, John Thomas, Jr.,	*Santa Ana,*	History
Nutting, Perley Gilman,	*Randolph, Wis.,*	Physics
Ogier, Adelaide Reid,	*San Jose,*	History
Ohara, Henlly Shoichi,	*Chibaken, Japan,*	Economics
Olcovich, Viola,	*San Francisco,*	Physiology
Olshausen, Bruno Adolph,	*Los Angeles,*	Chemistry *Sp.*
O'Neil, Robert Joseph,	*Portland, Or.,*	Law
Ortschild, John Francis,	*Portland, Or.,*	Physiology
Osborne, Henry Zenas, Jr.,	*Los Angeles,*	Civil Eng.
Osborne, Sherrill Blasdel,	*Los Angeles,*	Law
A. B., Stanford, 1897.		
Osgood, Wilfred Hudson,	*San Jose,*	Zoology
Oskison, John Milton,	*Vinita, I. T.,*	Law
Outcalt, Irving Erastus,	*Miramar,*	English
A. B., Stanford, 1896.		
Overacker, Michael Justus,	*Centerville,*	Ethics
Page, Benjamin Edwin,	*Pasadena,*	English
Page, Ernest Stoddard,	*Oakland,*	Law
Paine, Winifred Mabel,	*Redlands,*	Botany
Painter, Edward Emlen,	*San Francisco,*	History
Palmer, Burton Murray,	*Saratoga,*	Economics

Palmer, John Williams,	*Elsinore,*	English
Palstine, Oliver Price,	*Lower Lake,*	History *Sp.*
Park, Florence,	*San Jose,*	English *Sp.*
Parke, Emily B.,	*Palo Alto,*	German
Parker, Caroline Teresa,	*Napa,*	History
Parker, Garth,	*Salinas,*	Physiology
Parsons, Mary Emma,	*Elmira, N. Y.,*	German
	B. S., Elmira Coll., 1892.	
Passmore, Maud,	*Clearfield, Pa.,*	Latin *Sp.*
Patten, Nanita Olive,	*Eureka,*	English *Sp.*
Patterson, Frances Doremus,	*East Orange, N. J.,*	History
Patterson, Henry Samuel,	*East Orange, N. J.,*	Economics
Patterson, Letitia,	*East Orange, N. J.,*	Chemistry
Patterson, Mary Virginia,	*Salt Lake City, Utah,*	German
Pauly, James Aaron,	*San Diego,*	Civil Eng. *Sp.*
Payne, Rose,	*San Jose,*	English
Pearson, Eleanor Brooks,	*Palo Alto,*	Drawing
	A. B., Univ. of Michigan, 1888.	
Pearson, Harold Peter,	*Chicago, Ill.,*	Law *Sp.*
Peck, Allan Earle,	*San Diego,*	Physiology
Peck, Anne Earle,	*San Diego,*	History
Peckham, Harry Augustus,	*Watsonville,*	Civil Eng.
Peery, Jennie June,	*San Diego,*	English
Perkins, Charles Cranny,	*Hueneme,*	Economics *Sp.*
Perrin, Fleda Floy,	*San Jose,*	German *Sp.*
Perry, Clarence Arthur,	*Syracuse, N. Y.,*	English
Perry, Frederic Jewell,	*San Francisco,*	Law
Peter, Mary,	*Pomona,*	English
Peters, Emil Cornelius,	*San Francisco,*	Economics
Petree, Louis Edward,	*Kirksville, Mo.,*	Economics
Phelps, Bertha Margaret,	*Los Angeles,*	Latin
Phelps, Mary Mabel,	*San Jose,*	Drawing
Phelps, Maud,	*San Jose,*	Romanic Lang.
Phillips, Charlotte,	*Seattle, Wash.,*	English
Phillips, Minnie Fisher,	*San Diego,*	Mathematics
Picher, Oliver S., Jr.,	*Pasadena,*	Greek
Pierce, Benjamin Franklin,	*Ogden, Utah,*	English
*Pierson, Charles J.,	*Auburn, Neb.,*	Zoology
	A. B., Stanford, 1897.	
Pitcher, Marie Louise,	*Tacoma, Wash.,*	English
	A. B., Stanford, 1897.	

*Work completed, Summer School, 1896.

Place, Cornelia Louise,	*St. Paul, Minn,*	Education
Plate, Horatio Robinson,	*Palo Alto,*	Geology
Poindexter, Henry Tyhrie,	*Dillon, Mont.,*	Geology
Polhemus, John Hart,	*San Francisco,*	Law
Pomeroy, Horace,	*Oswego, Or.,*	Electrical Eng.
Poorman, Samuel Jr.,	*San Francisco,*	Law
Pope, Charles Stockton,	*Angel Island,*	Civil Eng.
Porter, Edith Virginia,	*Eureka,*	Latin
Porter, Mark Sibley,	*Chicago, Ill.,*	Mathematics *Sp.*
Porter, Victor Abbott,	*Salinas,*	Mechanical Eng. *Sp.*
Porter, Wilmattie,	*San Diego,*	Physiology
Post, Mary Helen,	*Santa Clara,*	Latin
	B. L., Smith Coll., 1896.	
Potter, Paul Calkins,	*San Francisco,*	Romanic Lang.
Pratt, Elizabeth Adelaide,	*San Francisco,*	English
Pratt, Minot Tully,	*Kansas City, Mo.,*	Civil Eng.
Preeman, Jacob Meyer,	*Kansas City, Mo.,*	Mathematics
Price, George Clinton,	*Palo Alto,*	Zoology
	B. S., De Pauw Univ., 1890.	
Price, Wilson Clark,	*Jamestown, N. Y.,*	History
Price, William Wightman,	*Oakland,*	Economics
Pritchard, William Anthony,	*Portsmouth, O.,*	Mech. Eng. *Sp.*
Purinton, Beulah Mignone,	*San Jose,*	Education
Quayle, Charles,	*Oakland,*	Law
Quelle, Julius Andrew,	*Long Island City, N. Y.,*	Law
Radovich, Spiro Bozo,	*San Jose,*	Law
Rambo, William Taylor,	*San Francisco,*	Economics
Ramsay, Georgina,	*Palo Alto,*	History
Rawdon, Blanche Louise,	*Palo Alto,*	English
Ray, Lillian Emeline,	*Santa Cruz,*	Physics
Raymond, Elma Annette,	*Mayfield,*	Education
Raymond, Irving C.,	*Mayfield,*	History *Sp.*
Redman, Oda,	*Watsonville,*	English
Redon, Alexander Louis, Jr.,	*New Orleans, La.,*	Civil Eng.
Redon, Louis Hartnagel,	*Victoria, B. C.,*	Physiology
Rees, George Llewellyn,	*Philadelphia, Pa.,*	Physiology
Reidy, Francis James,	*San Jose,*	Chemistry
Reynolds, Marion,	*West Side,*	History
Rice, John Ainsworth,	*Fallbrook,*	Geology, *Sp.*
Rice, John Bermingham,	*Santa Barbara,*	Geology
Rice, Roy Powell,	*Los Angeles,*	Economics *Sp.*
Richards, Charles Lenmore,	*Austin, Nev.,*	Law *Sp.*

Riddell, Charles Francis,	*Coronado,*	Economics
Rider, Ella Moore,	*Napa,*	Latin
Riedeman, John William,	*College Park,*	German
A. B., Wallace Coll., 1880.		
Riggins, Clarence Nye,	*St. Helena,*	Law
Riggins, Philip Bertrell,	*Santa Monica,*	History *Sp.*
Riley, Frank Branch,	*Portland, Or.,*	Economics
Risley, Allan Douglass,	*Kansas City, Mo.,*	Electrical Eng.
Roach, George Humphrey,	*Portland, Or.,*	Latin
Roberts, Charles Royden,	*San Diego,*	Ethics
Roberts, Don Carlos,	*Salt Lake City, Utah,*	Romanic Lang. *Sp.*
Roberts, Gilchrist Porter,	*Hannibal, Mo.,*	Latin
Roberts, Milnor,	*Colorado Springs, Col.,*	Geology
Roberts, Milnora de Beelen,	*Colorado Springs, Col.,*	German *Sp.*
Roberts, Roger de Leon,	*Ithaca, N. Y.,*	Entomology
Robinson, Edwin Gardner, Jr.,	*Los Angeles,*	Electrical Eng.
Robinson, George Hagar,	*San Francisco,*	Law
Rodgers Walter Clarence,	*San Francisco,*	Law
Roesman, Thomas Jefferson,	*San Jose,*	Chemistry
Rogers, Frank Fowler,	*Allentown, N. J.,*	Latin
Rogers, Guy,	*Bakersfield,*	Electrical Eng.
Rolfe, Frank,	*Los Angeles,*	Geology
Rosencrantz, Esther B.,	*San Francisco,*	Physiology
Ross, John Mason,	*Steubenville, O.,*	Law
Roth, Dorothea,	*Chicago, Ill.,*	Ethics
Rothrock, Edward Hiram,	*Spokane, Wash.,*	Law
Rounds, Goldie Jean,	*Vallejo,*	History
Roush, Thomas,	*Palo Alto,*	English
*Roy, Roland Free,	*Virginia City, Nev.,*	Mech. Eng.
A. B., Stanford, 1897.		
Ruddell, Frank Stallo,	*Indianapolis, Ind.,*	Law
Rumsey, Frances,	*Seattle, Wash.,*	English
Rush, Frederick Winn,	*Suisun,*	Geology
Rush, Richard Ira,	*Suisun,*	Electrical Eng.
Rusk, John Perley,	*Milwaukee, Or.,*	Economics
Russ, Arthur Charles,	*San Jose,*	Law
Russ, Bertha,	*Ferndale,*	Ethics *Sp.*
Russ, Edythe Josephine,	*Ferndale,*	English *Sp.*
Rutherford, John Henry,	*Fresno,*	History
Rutter, Cloudsley,	*Oakland City, Ind.,*	Zoology
B. S., Doane Coll., 1892; A. M., 1895; A. B., Stanford, 1896; A. M., 1896.		

* Work completed, Summer School, 1896.

Ryan, Jessie A.,	*Stockton,*	English
Sampson, George Henry,	*Portland, Or.,*	Electrical Eng.
Saunders, Ella Irene,	*San Jose,*	Education
Sawin, Fred Cornish,	*Palo Alto,*	Physiology *Sp.*
Sayer, Eugene Young,	*Denver, Col.,*	Electrical Eng.
Schaaf, Marie E.,	*San Jose.*	History
Schallenberger, Frances Reese,	*San Jose,*	Latin
A. B., Stanford, 1896.		
Schanck, Francis Raber,	*Elsinore,*	Mathematics
Schmidt, Alfred Francis William,	*Turner, Or.,*	German
A. B., Stanford, 1895.		
Schmutzler, Charles Frederick,	*Watertown, Wis.,*	German
Schneider, Frederick Arthur,	*College Park,*	Law
Schopbach, Mabel,	*Pasadena,*	Latin
Schott, Franklin Tuthill,	*Antioch,*	Physics
Schulte, William Henry Gerard,	*San Francisco,*	Law
A. B., Stanford, 1895.		
Schwartz, Charles Ernest,	*Elkville, Ill.,*	Economics
Scofield, Norman Bishop,	*Washington, Ia.,*	Zoology
A. B., Stanford, 1895.		
Scoville, George Albert,	*Corona,*	Electrical Eng.
Searight, Benjamin Franklin,	*Mexico, Mo.,*	German
A. B., William Jewell Coll., 1895.		
Seger, Mary Isabel,	*Riverside,*	Physics
Selby, Georgia Alice,	*Indianapolis, Ind.,*	History
Serpas, Carlos,	*Salvador, C. A.,*	Civil Eng.
Sewall, Edward Cecil,	*Portland, Or.,*	Physiology
Seward, George Lewis,	*San Francisco,*	Physiology
Seybolt, Fred Lewis,	*San Jose,*	Law
A. B., Stanford, 1897.		
Sharp, John Everett,	*San Francisco,*	Law
Shaw, Walter Robert,	*Moline, Ill.,*	Botany
A. B., Stanford, 1892; A. M., 1894.		
Sheldon, Henry Davidson,	*Santa Clara,*	Education
A. B., Stanford, 1896.		
Shelley, Elsie Hjerleid,	*Berryessa,*	Physiology
A. B., Stanford, 1894.		
Shelley, Helen Hjerleid,	*Berryessa,*	History
Shepard, Charles Hubert,	*Compton,*	Chemical Eng.
Shepler, Katharine Marvin,	*Council Bluffs, Ia.,*	English
Shibley, Ernest Harvey,	*Miller,*	Electrical Eng.
Shoemaker, Clara Maude,	*Los Gatos,*	Romanic Lang.
Shoemaker, Harlan,	*Sioux City, Ia.,*	Physiology

Shoemaker, Harry Ives,	*Tacoma, Wash.*,	Chemistry
Short, Frank Rice,	*Glenbrook, Nev.*	Geology
†Shults, Elbert Hubbell,	*Pasadena*,	Physics
Simons, Sarah Emma,	*Washington, D. C.*,	German
	A. B., Stanford, 1897.	
Sisson, Genevra,	*Oakland*,	Education
Skillings, Mary Ellen Covington,	*Alameda*,	Education
Sladen, Harry Stinson,	*Portland, Or.*,	Electrical Eng.
Slayton, Helen Elizabeth,	*Stowe, Vt.*,	Latin
	A. B., Stanford, 1894.	
Smedley, Frank Percival,	*Liverpool, Eng.*,	English
Smith, Elinor Alma,	*Portland, Or.*,	Romanic Lang.
Smith, Everett Wallace,	*Dorchester, Mass*,	English
Smith, Harlan Clinton,	*Portland, Or.*,	English
Smith, L. Agnes,	*San Diego*,	English
Smith, Leigh Richmond,	*San Jose*,	Latin
	A. B., Princeton Coll., 1872; B. D. and A. M., 1875.	
Smith, Paschal Roberts, Jr.,	*Deming, N. M.*,	Law
Smith, Rea Everett,	*Los Angeles*,	Physiology
Smith, Rose Flora,	*Los Angeles*,	Latin
Smythe, Charlotte Sumner,	*Santa Rosa*,	Latin
Snedden, David Samuel,	*Griffin*,	Education
	A. B, St. Vincent's Coll., 1890; A. M., 1892.	
Snipes, Ben Elliott, Jr.,	*Seattle, Wash.*,	Chemistry
Snodgrass, Robert Evans,	*Ontario*,	Zoology
Snow, William Appleton,	*Lawrence, Kan.*,	Entomology
	B. S., Univ. of Kansas, 1891; M. S., 1894.	
Snow, William Freeman,	*Palo Alto*,	Physiology
	A. B., Stanford, 1896.	
Snyder, John O.,	*Waterloo, Ind.*,	Zoology
Soper, William Henry,	*Honolulu, H. I.*,	Elec. Eng. *Sp.*
Southard, Carroll O'Brien,	*Palo Alto*,	Chemistry *Sp.*
Spaulding, May Wambold,	*Palo Alto*,	Ethics
Spencer, Louis Bernard,	*Ogden, Utah*,	Civil Eng.
Spencer, Rollin Herbert,	*Council Bluffs, Ia.*,	Latin
Spinks, Edward Lincoln,	*Merced*,	Economics
Spooner, D. Brainerd,	*Boston, Mass.*,	Archæology
Sprague, Benjamin,	*San Francisco*,	Chemistry *Sp.*
Sprague, Helen M.,	*Gilroy*,	History
Squire, Charles Henry,	*San Jose*,	History
Squire, John Adams,	*Palo Alto*,	Latin
	A. B., Harvard Univ., 1884.	

†Died Oct. 19, 1896

Staley, Arthur,	*Placentia,*	English
Stanhope, Burton Perle,	*Palo Alto,*	Latin
Stark, Mollie Pearl,	*San Jose,*	Ethics
Stebbins, Londa Loleta,	*Oakland,*	Hygiene *Sp.*
Stephens, Arthur Harlan,	*Butte, Mont.,*	Electrical Eng.
Stephens, Eleanor Harlow,	*San Jose,*	English
Stevens, Maud Frances,	*Oroville,*	History
Stevens, Nettie Maria,	*Chelmsford, Mass.,*	Physiology
Stewart, Berwyn Douglas,	*Santa Cruz,*	Electrical Eng.
Stewart, Gwendolyn,	*Santa Cruz,*	Economics
Stocking, Minnie,	*San Luis Obispo,*	Education *Sp.*
Stoltenberg, Clara S.,	*Los Angeles,*	Physiology
A. B., Stanford, 1896.		
Storey, Thomas Andrew,	*Palo Alto,*	History
A. B., Stanford, 1896.		
Storke, Thomas More,	*Santa Barbara,*	Economics
Stowe, Frank Rabineau,	*Menlo Park,*	Electrical Eng.
Stowe, John Reynolds,	*Menlo Park,*	Law
Straight, Herbert Randall,	*Bradford, Pa.,*	Economics
Streeter, Ethelwyn Grace,	*Portland, Or.,*	Romanic Lang.
Strohn, Clarence Burton,	*Los Angeles,*	History *Sp.*
Strohn, Roys Nelson,	*Los Angeles,*	English
Strong, Archibald McClure,	*Pasadena,*	Chemistry
Strong, Will Austin,	*Los Angeles,*	Economics
A. B., Stanford, 1897.		
Strowbridge, Mary Howard,	*Portland, Or.,*	German
Strunsky, Anna,	*San Francisco,*	English *Sp.*
Stupp, Christian Joseph,	*Astoria, Or.,*	Economics *Sp.*
Stupp Neal,	*Astoria, Or.,*	German *Sp.*
Styles, Henry Eckford,	*San Francisco,*	Law *Sp.*
Suber, Georgia Belle,	*Los Angeles,*	Botany
Sutherland, William Angus,	*East Oakland,*	Law *Sp.*
Suzzallo, Anthony Henry,	*San Jose,*	Ethics
Swain, Robert Eckles,	*Palo Alto,*	Chemistry
Swanson, Tillie Lucretia,	*Madison, Kan.,*	History
Swenson, John Canute,	*Pleasant Grove, Utah,*	Economics
Swett, Helen,	*Martinez,*	Zoology
Switzer, John Marion,	*Palo Alto,*	History
Sykes, Edmund Taylor,	*Minneapolis, Minn.,*	Elec. Eng. *Sp.*
Taggart, Louis Edward,	*Grand Rapids, Mich.,*	Physics *Sp.*
Takagi, James June,	*Tottori, Japan,*	Electrical Eng.
Talbert, Franklin Lilburn,	*Santa Clara,*	Economics *Sp.*

Taylor, George Burrowes,	*Edwardsville, Ill.*,	Law
Taylor, Henry Huntly,	*San Francisco*,	History
Taylor, Winifred Hawkins,	*Steubenville, O.*,	English
Tebbs, Ross Linden,	*Auburn*,	Law *Sp.*
Temple, Grace Douglas,	*Los Gatos*,	Latin
Thoits, Edward Clair,	*Palo Alto*,	History
Thomas, Benjamin,	*Palo Alto*,	Physiology
Thomas, Chester A.,	*Los Angeles*,	Geology
Thomas, Clarence Lot,	*Storm Lake, Ia.*,	History
Thomas, Edward Lewis,	*Santa Rosa*,	Economics *Sp.*
Thomas, John Shepard,	*San Francisco*,	Civil Eng. *Sp.*
Thomas, Laura Ann,	*San Jose*,	Psychology
Thomas, William Widgery, 2d,	*Portland, Me.*,	Law
A. B., Bowdoin Coll., 1894.		
Thompson, Charles Lawrence,	*Santa Barbara*,	Economics
Thompson, Frank Ernest,	*San Jose*,	Physiology *Sp.*
Thompson, Herbert Cooper,	*Eugene, Or.*,	Romanic Lang.
A. B., Stanford, 1896.		
Thompson, Jessie E.,	*Portland, Or.*,	Drawing *Sp.*
Thompson, Mary,	*Milwaukee, Wis.*,	English
Thompson, Nellie May,	*acoma, Wash.*,	History
Thompson, Ray Walter,	*Palo Alto*,	Chemistry
Thompson, Walter James,	*Palo Alto*,	Law *Sp.*
Thomson, Robert William,	*San Francisco*,	Electrical Eng. *Sp.*
Thomson, William Henry,	*Redwood City*,	German
Timmons, Joseph H.,	*Santa Ana*,	Economics
Tobiason, Ole,	*Brookfield, Wash.*,	Civil Eng.
Toll, Abel Hyde,	*Baldwinsville, N. Y.*,	Civil Eng.
Toombs, Bertha C.,	*Modesto*,	Romanic Lang.
Townsend, Arthur Chisholm,	*San Jose*,	Physiology *Sp.*
Townsend, Mabel Anna,	*Palo Alto*,	Chemistry
Townsend, Percy Seymour,	*Palo Alto*,	Latin
Townsend, Vera,	*Palo Alto*,	Latin
Tozer, Charles Walter,	*Sacramento*,	History *Sp.*
Traylor, Lucy Lowe,	*Pasadena*,	English
Treat, Fred Aldrich,	*Salinas*,	Law
Tripp, Don Everett,	*Vallejo*,	Civil Eng.
Tubbs, Julia Benson,	*Ontario*,	English
Tucker, Adelaide M.,	*Ontario*,	Education
Tucker, Milo Asem,	*Palo Alto*,	History
A. B., Stanford, 1896.		
Tucker, Mary Frances,	*Ontario*,	History

Turcot, Josephine May, *Santa Cruz,* Romanic Lang.
Turner, Harry Coburn, *Los Angeles,* Chemistry
Turner, Henry Ward, *Washington, D. C.,* Geology
B. S., Columbia Univ., 1895.
Tuttle, Edward William, *San Jose,* Latin
Twieg, William Charles, *Cleveland, O.,* Latin
Van Denburgh, John, *San Francisco,* Zoology
A. B., Stanford, 1894; A. M., 1895.
Van Gorden, Earl, *Cambria,* Physiology
Van Kaathoven, Abram Jean, *Willows,* Physiology
Van Norden, Ottomar Hoghland, *Sacramento,* History
Van Voorhies, Ralph Henry, *Sacramento,* History *Sp.*
Vennerstrom, Jennie Amelia, *St. Paul, Minn.,* German
Ph. B., Hamline Univ., 1895.
Veuve, Erle Le Roy, *Port Townsend, Wash.,* Civil Eng. *Sp.*
Vining, Ellen, *San Francsico,* English
Wade, Junia Anne, *Oregon City, Or.,* Physiology
Walker, Charles Ashley, *Chico,* Law
Walker, Jean Josephine, *San Francisco,* Romanic Lang.
Walker, Laura Winnetta, *Palo Alto,* Romanic Lang *Sp.*
Walker, Paul Elliott, *Holton, Kan.,* Economics
Wallace, Anna Theresa, *Chicago, Ill.,* Latin
Walter, Herbert David, *San Francisco,* English
Walter, John Isidor, *San Francisco,* Greek
Walter, Mary Etta, *San Jose,* English
Wardall, Ralph Hewitt, *Los Angeles,* History
Warden, Christie E., *San Francisco,* English
Warren, Howard Saunders, *Bucksport, Me.,* Electrical Eng.
Warren, Joanna Elizabeth, *Silver City, N. M.,* Physiology
Wathey, Charles Kane, *Butte, Mont.,* Electrical Eng.
Watson, Florence Elizabeth, *San Diego,* Education
Watt, Fred William, *San Leandro,* Geology *Sp.*
Weaver, Anna Frances, *Logansport, Ind.,* Latin
A. B., Stanford, 1897.
Webb, Winifred, *Pasadena,* English
A. B., Stanford, 1897.
Webster, David Hutton, *National City,* Economics
A. B., Stanford, 1896.
Webster, Mary Clifford, *San Diego,* Latin
Wehner, Ida, *Evergreen,* German *Sp.*
Welch, Horace Herbert, *Los Angeles,* Physics
Wellman, Mary Harriett, *Carlsbad,* Entomology
A. B., Univ. of Kansas, 1892; A. M., 1894.

Wells, William Bittle,	*Portland, Or.,*	English
West, Arthur Benjamin,	*Denver, Col.,*	Law
West, John Franklin,	*Paso Robles,*	Mathematics
Westall, Marion Merrick,	*Palo Alto,*	Law *Sp.*
Westcott, Elizabeth F.,	*Palo Alto,*	German *Sp.*
Westcott, Robert,	*Palo Alto,*	Physiology
Whitaker, Albert Conser,	*Los Angeles,*	Law
White, Hilton Richmond,	*Tacoma, Wash.,*	Economics
White, Will Rainwater,	*Olympia, Wash.,*	Civil Eng.
Whiting, Lulu Natalia,	*Mountain View,*	Latin
Whitmire, Fred Austin,	*San Jose,*	Physiology
Whittier, Clark Butler,	*Palo Alto,*	History
A. B., Stanford, 1893; LL. B., Harvard Univ., 1896.		
Whittier, Florence Bertha,	*Riverside,*	Greek
Whittier, Winifred Caldwell,	*Palo Alto,*	History
A. B., Stanford, 1895.		
Wickersham, Lloyd Blauvelt,	*Portland, Or.,*	Electrical Eng.
Wier, Jennie Elizabeth,	*Reedley,*	History
Wight, Otis Buckminster,	*Palo Alto,*	Physiology
Wigle, Elsie Alice,	*Palo Alto,*	German
A. B., Stanford, 1895.		
Wigle, Ruby Beatrice,	*Palo Alto,*	German
Wilbur, Ray Lyman,	*Riverside,*	Physiology
A. B., Stanford, 1896.		
Wilbur, Ralston Thornton,	*Oakland,*	Geology
Wilkinson, Frank,	*Acampo,*	Geology
A. B., Stanford, 1895.		
Wilkinson, Frank E.,	*Salt Lake City, Utah,*	Law, *Sp.*
Williams, Ernest Stanwood,	*Los Angeles,*	Economics
Williams, Frederick Langston,	*Palo Alto,*	Bionomics
Williams, Grant Langworthy,	*Palo Alto,*	English
Williams, Helen Webster,	*Redlands,*	Latin
Williams, Simeon Waldo,	*San Jose,*	Law
Williams, Thomas Marion,	*Duo W. Va.,*	Physiology
Williston, Alice Belle,	*San Jose,*	Latin
Wills, Frank Durack,	*Antioch,*	Law
Wilson, Ernest,	*Salem, Or.,*	History
Wilson, Elihu Clement,	*Los Angeles,*	Law *Sp*
Wilson, Evangeline,	*Elmira,*	German
Wilson, George Benton,	*Los Angeles,*	Law
A. B., Stanford, 1896.		
Wilson, Harry Fisher,	*Los Angeles,*	Civil Eng. *Sp.*
Wilson, Llewellyn Burt,	*Palo Alto,*	History

Wilson, Minnie Edith,	*Elmira,*	Bionomics *Sp*
Wilson, William Cyrus,	*San Francisco,*	Drawing *Sp.*
Winn, Ann Bartlett,	*San Diego,*	German
Winn, Lera,	*San Diego,*	Ethics
Wirt, Charlotte,	*Santa Rosa,*	Education
Wolfenbarger, Frances B.,	*San Jose,*	English
Wood, Alfred Eugene,	*Palo Alto,*	Geology
A. B., Stanford, 1896.		
Wood, Alfa Retta,	*Colfax, Ia.,*	Latin
Woodruff, George Hobart,	*Watertown, Conn.,*	History
Woodward, Henry Thomas,	*San Diego,*	Physiology
A. B., Stanford, 1895.		
Wootten, Joseph Bivens,	*Linden,*	Education *Sp.*
Workman, William Henry, Jr.,	*Los Angeles.*	Electrical Eng.
A. B., St. Vincent's Coll., 1893; A. M., 1895.		
Worstell, Luneti McCreary,	*Wallace, Idaho,*	Ethics *Sp.*
Wright, Annie Louise,	*San Luis Obispo,*	Mathematics
A. B., Stanford, 1896.		
Wright, Charles Frederick,	*San Luis Obispo,*	History
A. B., Stanford, 1896.		
Wright, George Henry Burwell,	*Redlands,*	English
Wright, Max Goethe,	*Grand Rapids, Mich.,*	Romanic Lang.
A. B., Stanford, 1896.		
Wright, Samuel Vaughan,	*Mayfield,*	Law
A. B., Stanford, 1895.		
Wright, William Quimby,	*San Jose,*	Physics
Wurr, Dora Desideria,	*Harrison,*	English
Yocum, Joseph Grant,	*Pasadena,*	Chemistry
Yost, George Herbert,	*Arroyo Grande,*	English
Young, Bertram Nelson,	*Eureka,*	Mechanical Eng.
Young, Lemuel Watt,	*Bradford, Pa.,*	Physiology
Young, Lena Calhoun,	*Santa Rosa,*	Education
Young, May Orrilla,	*Rock Island, Ill.,*	Latin
Young, Nellie Brown.	*Des Moines, Ia.,*	Romanic Lang. *Sp.*
Young, Willard Tuthill,	*Kelseyville,*	Physiology
Younger, Helen,	*Santa Cruz,*	History
Zahn, Edwin Leonard,	*San Jose,*	German
A. B., Ohio Wesleyan Univ., 1895.		
Zion, Edwin Ray,	*Palo Alto,*	Economics
A. B., Stanford, 1894; A. M., 1896.		
Zook, Samuel Kurtz,	*New York, N. Y.,*	History *Sp.*
Zschokke, Anna Probst,	*Palo Alto,*	Ethics *Sp.*
Zschokke, Theodore Christian,	*Palo Alto,*	History

SUMMARIES.

By Classes.

In Graduate Standing	97
Undergraduates	808
Special Students	186
Total (men, 691; women, 400)	1091

By Major Subjects.

	Graduate.	Undergraduate	Special.	Total.	*No. of students in all classes.	*Total reg'tr'n in all classes.
Greek	1	8	1	10	37	53
Latin	11	52	3	66	114	205
Archaeology	—	2	—	2	—	—
German	6	35	14	55	398	494
Romanic Lang	5	16	4	25	288	334
English	11	111	18	140	457	691
Psychology	1	3	—	4	19	33
Ethics	—	15	6	21	141	149
Bionomics	—	3	—	3	126	128
Education	5	38	7	50	209	284
History	13	111	23	147	397	611
Economics	3	58	11	72	343	512
Law	9	84	29	122	139	349
Mathematics	3	25	1	29	148	255
Physics	—	11	1	12	57	62
Chemistry	4	30	8	42	131	191
Botany	1	9	2	12	27	37
Entomology	2	5	1	8	18	18
Hygiene	—	4	6	10	374	412
Physiology	8	67	11	86	107	162
Zoology	4	14	3	21	77	85
Geology	4	20	6	30	137	148
Drawing	2	4	6	12	59	70
Civil Eng	3	30	5	38	100	174
Mechanical Eng	—	11	8	19	61	78
Electrical Eng	1	43	11	55	38	102

*First Semester.

By Residence.

California	729	Michigan	4
Oregon	56	Nebraska	4
Washington	35	Arkansas	3
Colorado	21	Idaho	3
Illinois	19	Maine	2
Indiana	17	Vermont	2
New York	15	Wyoming	2
Iowa	14	Arizona	1
Pennsylvania	14	Delaware	1
Missouri	13	Indian Territory	1
Ohio	13	Kentucky	1
Montana	12	Louisiana	1
Utah	12	South Carolina	1
Minnesota	11	South Dakota	1
New Mexico	10	Texas	1
New Jersey	8	Canada	7
Massachusetts	7	Japan	6
Nevada	7	Brazil	5
District of Columbia	6	Central America	2
Connecticut	5	China	2
West Virginia	5	England	2
Wisconsin	5	Hawaii	1
Kansas	4		

California by Counties.

Alameda	38	Riverside	15
Amador	1	Sacramento	10
Butte	8	San Bernardino	18
Calaveras	1	San Diego	43
Contra Costa	6	San Francisco	74
Colusa	2	San Joaquin	6
Eldorado	2	San Luis Obispo	16
Fresno	3	San Mateo	11
Glenn	1	Santa Barbara	8
Humboldt	15	Santa Clara	230
Kern	2	Santa Cruz	11
Kings	1	Shasta	1
Lake	4	Solano	15
Los Angeles	91	Sonoma	8
Marin	5	Siskiyou	3
Mendocino	7	Stanislaus	8
Merced	1	Sutter	1
Monterey	10	Tulare	3
Napa	18	Ventura	7
Nevada	1	Yolo	2
Orange	16	Yuba	2
Placer	4		

Degrees Conferred.

MAY 27, 1896.

Bachelors of Arts.

In Greek:

Margaret Foster, Harold Edward Smith,
Herbert Cooper Thompson.

In Latin:

Frances Reese Schallenberger, James Owen Watson.

In Germanic Languages:

George Sanford Brooks, Grace Evelyn Holsclaw,
Janette Hall Rossiter.

In Romanic Languages:

Frederica Caro Lord, Mabel Coombs,
Max Goethe Wright.

In English:

William Dinsmore Briggs, Alice Newman Hays,
Guy Hunt Cochran, Hilda McLaughlin,
Sarah Comstock, Mabel Mead,
Charles Maurice Cram, William Jonathan Neidig,
Julia Louise Culver, Irvin Erastus Outcalt,
Florence Cushman, Leonora Schopbach,
Frederica Hermine De Laguna, Estelle Sinsheimer,
Le Roy D. Ely, Laura Steffens,
Maud L. Grover, Edith Janet Straight,
Howard Judson Hall, Mary Lura Whitlock,
Mattie Elizabeth Haven, Lucy Evelyn Wight.

In Psychology:

Henry Harwood, William Sumner Libby.

In Ethics:

Winifred Harper.

In Education:

Flora Eleanor Beal, B. L.,
Estelle M. Darrah,
Anna Köhler,
George Elmer St. John,
Milo Asem Tucker,
Clara L. Percy Westphal.

In History:

Carrie Blanche Aberdein,
Joseph Phillip Bernhard,
Benjamin Franklin Bledsoe,
Bertram Nathaniel Bullock,
Robert Willis Campbell,
William Evan Campbell,
Aurthr Martin Cathcart,
Everett Leroy Davis,
Frank Carlton Doty,
John Munford Gregory, Jr.,
Nello De Vore Johnson,
Charles Henri Labbé
Jay Earl Lawshé,
David Thompson McClelland, A. B.,
Anna Henrietta Martin,
Charles Wesley Miller,
Elmer Isaiah Miller,
Lucy C. Mount,
Walter Gilmore Nagel,
George Winfield Scott,
Henry Davidson Sheldon,
Cecil Henry Smith,
Thomas Andrew Storey,
James Alexander Tucker,
George Francis Vandeveer,
Charles Frederick Wr gh t.

In Economics and Sociology:

Anita Lawrence Corbert,
Joseph Paull Fife,
Walter Ngon Fong,
Wynne Powers Harrington,
Norman Watson Judd,
Charles Paul Kaetzel,
David Hutton Webster,
Charles Bruce Younger, Jr.

In Law:

Milton Louis Anfenger,
Hugh Henry Brown,
William Coligny Doub,
Joel Yancy Field,
Myron Arlie Folsom,
Paul Rich Frost,
Herbert Stephen Hicks,
Caspar Wistar Hodgson,
John Andrew Hoshor,
Jesse Huber,
Charles Ross Lewers,
Bernard Lee Mills,
Ralph Rittenhouse Raish,
Jackson Eli Reynolds,
George Benton Wilson.

In Mathematics:

Hans Frederick Blitchfeldt,
Flora Valentine Richards,
Annie Louise Wright.

In Astronomy:

Arthur French Poole.

In Physics:

Henry Adams Wood.

In Chemistry :

George Brinton Albee,
Marion Louise Berneike,
Ella Frances Byxbee,
Henry Manning Cory,
Thomas Bruce Freas,
Homer Laughlin, Jr.

In Botany :

Frances Agnes Bowman,
Susie Gabriella Stokes.

In Entomology :

Rennie Wilbur Doane.

In Physiology :

Charles Herbert Boxmeyer,
Llywelyn Breese, Jr.,
Evelyn Briggs,
John Adams Colliver,
John McPherson Gates,
Daniel W. Harrington,
Christian Ferdinand Leithold,
Ellen Louise Lowell,
Lewis Sayre Mace,
Charles B. Pinkham,
Harry B. Reynolds,
Charles David Snyder,
Harleigh Frederic Soper,
Alfred Baker Spalding,
Ray Lyman Wilbur.

In Geology :

Thomas K. Code,
George Washington Riter.

In Civil Engineering :

Will Lear Brown,
Gion Wakefield Gibson,
Carl Porter Gould,
Charles Henry Parcell,
John Ellsworth Rockhold.

In Mechanical Engineering:

Charles Emmons Bunker,
Ernest Edward Lawrence,
Norman Brownell Roper,
George Toombs,
Rudolph Warner Van Norden,
Alfred Eugene Wood,

In Electrical Engineering :

George Porter Baldwin,
Clyde Ernest Condit,
Harold Townsend Copeland,
George Washington Cuthbertson.

Masters of A s.

In Greek :

Richard Wellington Husband, A. B.

In Latin :

Edward Charles Harwood, A. B.

In English :

Mary Polk, A. B., Jessica S. Vance, Ph. B.

In Education :

Charles Josephus C. Bennett, A. M., Horace Humboldt Howe, Ph. B.

In Economics :

Edwin Ray Zion, A. B.

In Law:

George Edward Crothers, A. B., Britton Day Wigle, A. B., Owen Griffith Hopkins, A. B., Gilbert Griffin Wigle, A. B.

In Mathematics :

Walter Edwin Winship, A. B.

In Chemistry:

Maxwell Adams, A. B., Arthur Lowell Emery, A. B.

In Botany :

Elizabeth Merrill Babcock, A. B.

In Physiology :

Chester Lea Magee, A. B.

In Zoology ;

Cloudsley Rutter, A. B.

Engineers.

In Electrical Engineering :

Ernest Chesney Hayward, A. B., William Henry Reeves, Jr., A. B.

Doctors of Philosophy.

Daniel William Murphy, A. M., Mary Roberts Smith, M. S.,
Karl G. Rendtorff, A. M., Kathryne Janette Wilson, Ph. B.

SEPTEMBER 11, 1897.

Bachelors of Arts.

In Germanic Languages:
Adeline Matilda Loehr.

In Economics and Sociology:
Frank William Morrison.

In Chemistry:
William Freeman Snow.

In Entomology:
Lyman Van Wickle Brown.

In Mechanical Engineering:
Dexter Simpson Kimball.

JANUARY 7, 1897.

Bachelors of Arts.

In Greek:
Harris Campbell Allen.

In Latin:
Josephine Caroline Beedy, Anna Frances Weaver.

In Germanic Languages:
Sarah Emma Simons.

In Romanic Languages:
Louise Amesbury.

In English:
George Hercules Hazzard, Marie Louise Pitcher,
Emma Louise Martin, Winnifred Webb.

In Economics and Sociology:
William Augustus Strong.

In Law :

William Baldwyn Fletcher, Jr., Ira Shell Lillick,
Horace Hayes Hindry, Sherrill Blasdel Osborne,
Fred Lewis Seybolt.

In Chemistry :

Harry Wheeler Morse.

In Physiology :

Herbert Fiske Bishop.

In Zoology :

Charles J. Pierson.

In Civil Engineering :

David Ewald Brown, Robert Emmet McDonnell.

In Mechanical Engineering :

Roland Free Roy.

Alumni Association.

ORGANIZED JUNE 15, 1892.

CONSTITUTION.

In order to promote the interests of the University, to secure unity among its graduates, and to foster an attachment to our *Alma Mater*, we do hereby constitute ourselves an association to be known as the Alumni Association of the Leland Stanford Junior University.

1. All persons who have received a degree from the Leland Stanford Junior University are members of this Association.

2. All members of the Faculty are honorary members of this Association.

3. The officers of this Association shall be a President; one Vice-President from each successive group of five classes, provided that when the last group shall number three classes it shall thereafter be entitled to a Vice-President; a Secretary; and a Treasurer.

4. There shall be an Executive Committee to consist of the following persons: the Secretary and Treasurer of the Association, and three other persons chosen by the Association, one of whom shall be designated as Chairman of the Committee.

5. It shall be the duty of the Executive Committee to arrange the programmes for Alumni Day and other public occasions; to regulate the finances of the Association; to perform such other duties as may be imposed upon them, and to attend to all business of the Association not otherwise provided for.

6. The President shall be *ex-officio* a member of all committees. At each annual business meeting he shall appoint a committee of two persons to audit the Treasurer's accounts.

7. The officers and the Executive Committee shall be elected by ballot at the annual business meeting to be held on Alumni Day, a majority of all votes cast being necessary for election.

8. Any proposition to alter or amend these Articles of Association must be made at a regular meeting, and have the assent of two-thirds of the members present.

OFFICERS FOR 1896–97.

President — Arthur Henry Barnhisel, '93.

Vice-President — Frederick John Teggart, '94.

Secretary — Clara S. Stoltenberg, '96.

Treasurer — Charles Ellwood Cox, A. M., '93.

Executive Committee — Charles Kellogg Field, '95, Chairman; Charles Ellwood Cox, A. M. '93; Herman de Clercq Stearns, '92, A. M., '93; Clara S. Stoltenberg, '96; Bertha Louise Chapman, 95.

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UNIVERSITY PUBLICATIONS.

(*Continued from second page of Cover.*)

6. Rutler, Cloudsley, *A. M.* Notes on Fresh Water Fishes of the Pacific Slope of North America. pp. 24. 25c.

7. Kellogg, Vernon Lyman, *M. S.* New Mallophaga (II). From Land Birds, together with an account of the Mallophagous Mouth-parts. pp. 122. 14 *plates.* $1.00.

8. Starks, Edwin Chapin. List of Fishes Collected at Port Ludlow, Washington. pp. 14. 2 *plates.* 50c.

9. Smith, James Perrin, *Ph. D.* Marine Fossils from the Coal Measures of Arkansas. pp. 72. 9 *plates.* 75c.

10. Kellogg, Chapman, and Snodgrass. New Mallophaga (III). Comprising: Mallophaga from Birds of Panama, Baja, California, and Alaska, by Vernon L. Kellogg, M. S., and B. L. Chapman; The Anatomy of the Mallophaga, by R. C. Snodgrass. pp. 200 (about). 10 single *plates*, and 10 folded *plates.* (*In press.*)

THE LIBRARY.

1. Hopkins Railway Library. Catalogue; by Frederick J. Teggart, A. B. pp. 231. $1.50 bound, $1.25 unbound.

UNIVERSITY ADDRESSES.

1. Howard, George Elliott, *Ph. D.* The American University and the American Man. Second Commencement Address, May 31, 1893. pp. 22. 15c.

The University Charter, Etc. Reprint of Circulars 1 and 2.

Exercises of the Opening Day, 1891. [Circular No. 5.]

Address of Mrs. Stanford to the Trustees. (1897.)

Specimen Examination Questions. 1895; 1896; 1897 (ready in June).

Schedule of Lectures and Recitations, and Directory, for 1897-98. Price, Ten Cents. [Ready May 17.]

The University Register. Published in April of each year.

ADDRESS,

THE REGISTRAR,

Stanford University, California.